

ONKYO SERVICE MANUAL

AUDIO VIDEO CONTROL TUNER AMPLIFIER

MODEL TX-SV909PRO



Black model

BHUD, BHUDN	120V AC, 60 Hz
BHUG	220V AC, 50Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

SPECIFICATIONS

AMPLIFIER SECTION

Power output:	Stereo mode Front L/R channels 110 watts per channel min. RMS. at 8 ohms, both channels driven, from 20Hz to 20,000Hz, with no more than 0.04% total harmonic distortion.
Surround mode	
Center channel	
110 watts min. RMS. at 8 ohms 1,000Hz, with no more than 0.08% total harmonic distortion.	
Rear channels, Front Enhance/ Remote channels	30 watts per channel min. RMS. at 8 ohms 1,000Hz with no more than 0.08% total harmonic distortion.
IM distortion:	0.04% at rated power (FRONT)
Damping factor:	70 at 8 ohms (FRONT)
Sensitivity and impedance:	Phono: 2.5mV/50 kohms CD/Tape Play: 150mV/50 kohms Tape Rec: 150mV/2.2 kohms Pre out (FRONT): 1V, 2.2 kohms Pre out (REAR/CENTER/FRONT/ENHANCE): 1V, 2.2 kohms Mono out (SUB WOOFER): 1V, 2.2 kohms
Phono overload:	120mV RMS. at 1,000 Hz, 0.5 % THD.
Frequency response:	20 to 30,000 Hz, +/-1 dB VIDEO IN → DOLBY PRO LOGIC SURROUND → REAR PRE OUT : 30 to 7 kHz, +0 dB, -3 dB
RIAA deviation:	20 to 20,000 Hz, +/-0.8 dB
Tone control:	BASS: +/-10 dB at 100 Hz TREBLE: +/-10 dB at 10,000 Hz
(Front L/R, center)	
Signal-to-Noise ratio: (SURROUND MODE: OFF)	PHONO: 80 dB (IHF A, 5mV input) CD/TAPE: 100 dB (IHF A) -∞dB
Muting:	

VIDEO SECTION

Sensitivity and Impedance:	VIDEO 1 – 6 (IN) VIDEO input: 1Vp-p, 75 ohms
	VIDEO 1 – 3 (OUT), MONITOR OUT VIDEO output: 1 Vp-p, 75 ohms
	input: Y signal 1 Vp-p, 75 ohms C signal 0.28 Vp-p, 75 ohms
	VIDEO1 – 3 (OUT), MONITOR OUT S-VIDEO output: Y signal 1 Vp-p, 75 ohms C signal 0.28 Vp-p, 75 ohms

TUNER SECTION FM:

Tuning range:	87.50 – 108.00 MHz (50 kHz steps)
Usable sensitivity:	Mono: 11.2 dBf, 1.0 μV (75 ohms) Stereo: 17.2 dBf, 2.0 μV (75 ohms)
50 dB quieting sensitivity:	Mono: 17.2 dBf, 2.0 μV (75 ohms) Stereo: 37.2 dBf, 20 μV (75 ohms)
Capture ratio:	1.5 dB
Image rejection ratio:	80 dB
IF rejection ratio:	90 dB
Signal-to-Noise ratio:	Mono: 76 dB Stereo: 70 dB
Alternate channel	
Attenuation:	55 dB
AM suppression ratio:	50 dB
Harmonic distortion:	Mono: 0.1% Stereo: 0.2%
Frequency response:	30 – 15,000 Hz ± 1.0 dB
Stereo separation:	45 dB at 1kHz 30 dB at 100 – 10,000 Hz
Muting level:	17.2 dBf
AM:	
Tuning range:	530 – 1710 kHz (10 kHz steps) 522 – 1611 kHz (9kHz steps)
Usable sensitivity:	30 μV
Image rejection ratio:	40 dB
IF rejection ratio:	40 dB
Signal-to-Noise ratio:	40 dB
Harmonic distortion:	0.7%

GENERAL

Power supply:	USA and Canadian models AC120V, 60Hz
Dimensions (W x H x D):	455 x 190 x 425 mm 17-15/16 " x 7-7/16 " x 16-11/16 "
Weight:	22 kg.. 48.5 lbs.

REMOTE CONTROL TRANSMITTER RC-230M

Transmitter:	Infrared
Signal range:	Approx. 5 meters (16ft.4")
Power supply:	Four "AA" batteries (1.5V x 4)

Specifications and features are subject to change without notice.

Manufactured under license from Dolby Laboratories Licensing Corporation. Additionally licensed under one or more of the following patents: U.S. numbers 3,632,886, 3,746,792 and 3,959,590; Canadian numbers 1,004,603 and 1,037,877. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

SERVICE PROCEDURES

1. Replacing the fuses

For continued protection against fire hazard, replace only with same type and same rating fuse.

Circuit No.	Part No.	Description
F901	252053	▲ 8A(ST-6),Primary fuse <D>
F902	252049	▲ 4A(ST-6),Primary fuse <D>
F903	252077	▲ 4A-SE-EAK,Primary fuse <G>
F904	252074	▲ 2A-SE-EAK,Primary fuse <G>

NOTE:<D>:120V model only

<G>:220V model only

2. Change of AM band step

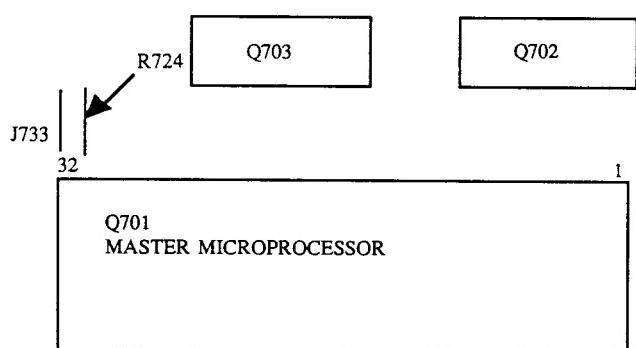
This model is not provided a band step selector switch.

(AM)

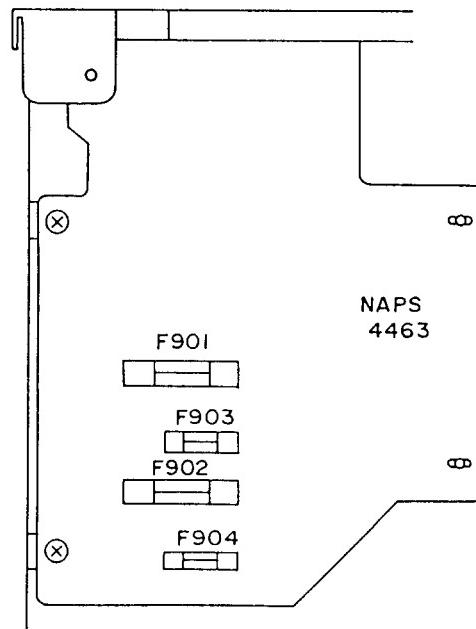
Band Step	R724
10 kHz → 9 kHz	Addition
9 kHz → 10 kHz	Removement

In Carbon Resistor R724 10 kΩ (Part No. 417341034)

is used.



MASTER MICROPROCESSOR CIRCUIT PC BOARD



3. Memory preservation

This unit does not require memory preservation batteries. A built-in memory power back-up system preserves contents of the memory during power failures and even when the unit is unplugged. The unit must be plugged in and the power switch turned on and off once in order to charge the back-up system. Note that since this is not a permanent memory the power switch must be turned on and off a few times each month to keep the back-up system operative. The period of time during which memory contents are preserved after power has last been turned off varies depending on climate and placement of the unit. On the average, memory contents are protected over a period of 3 to 4 weeks (a minimum of 2 weeks) after the last time power has been turned off. This period is shorter when the unit is exposed to very high humidity or used in an area with an extremely humid climate.

4. Safety-check out

(Only U.S.A. model)

After correcting the original service problem perform the following safety check before releasing the set to the customer.

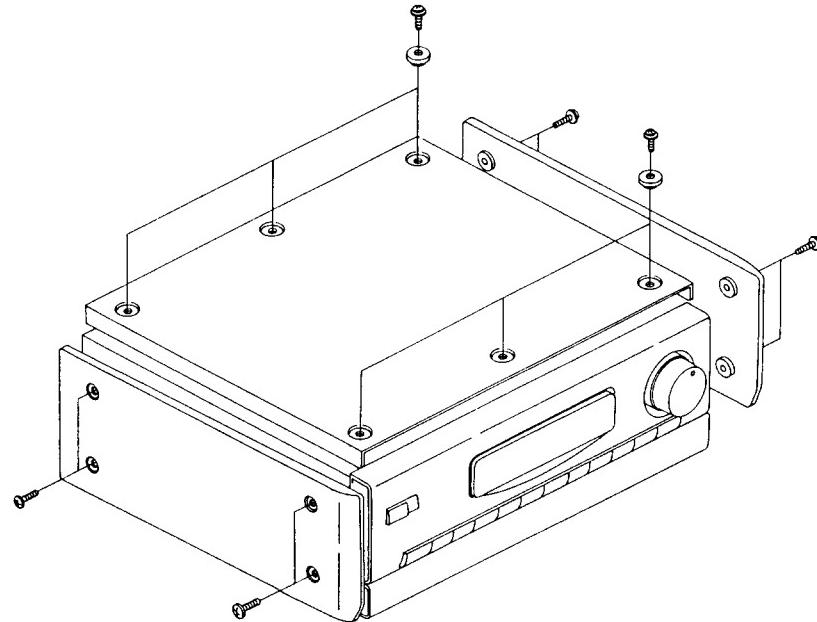
Connect the insulating-resistance tester between the plug of power supply cord and terminal GND on the back panel. Specifications: 3.3 Mohm ±10% at 500V.

DISASSEMBLING PROCEDURES

1. Top Cover

Remove the eight screws holding the side panels and the chassis.

Remove the six screws holding the top cover and chassis.



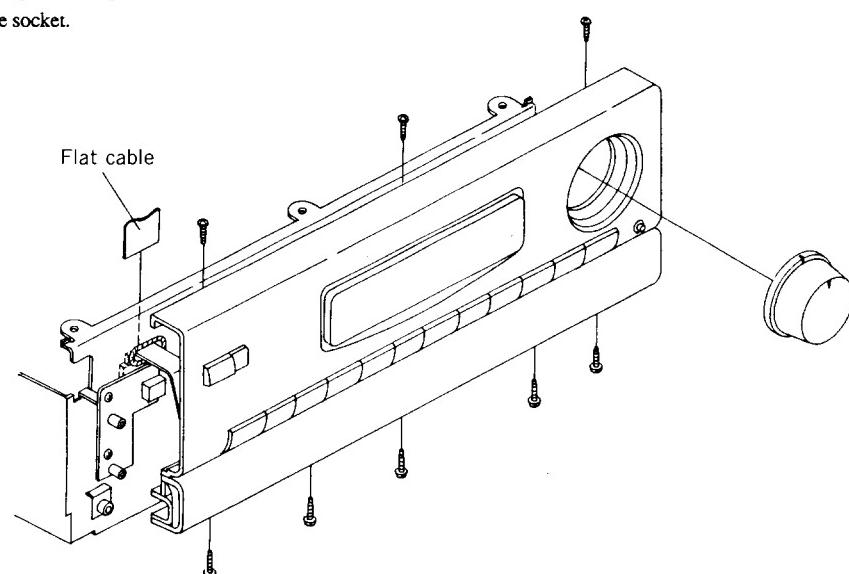
2. Front Panel

Remove the top cover.

Remove the volume knob.

Remove the eight screws holding the front panel and the front bracket.

Remove the flat cable from the socket.



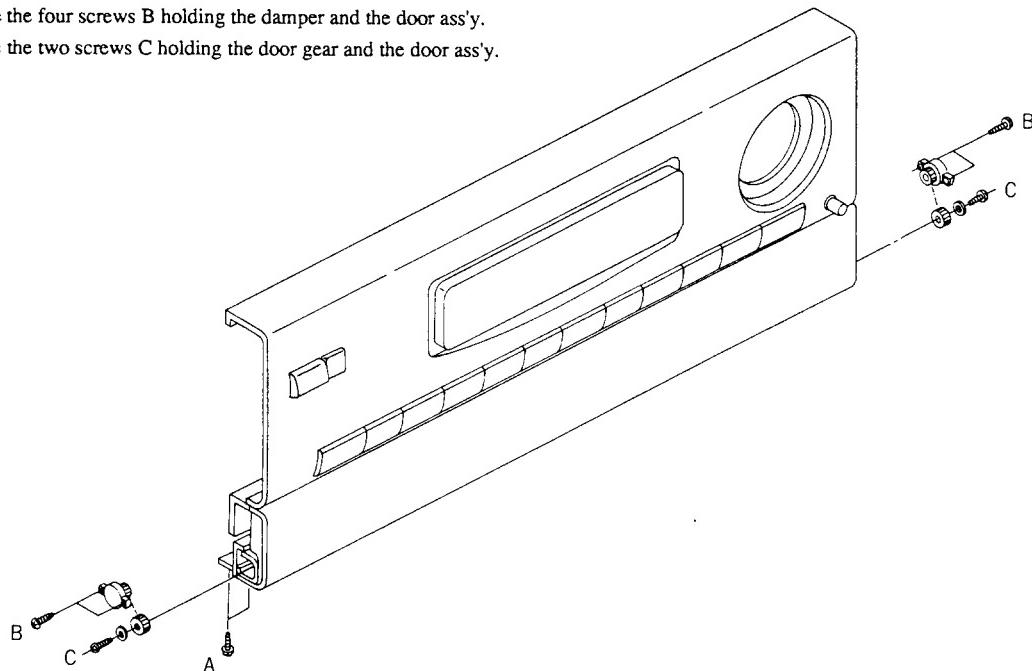
3. Door ass'y

Remove the front panel.

Remove the two screws A.

Remove the four screws B holding the damper and the door ass'y.

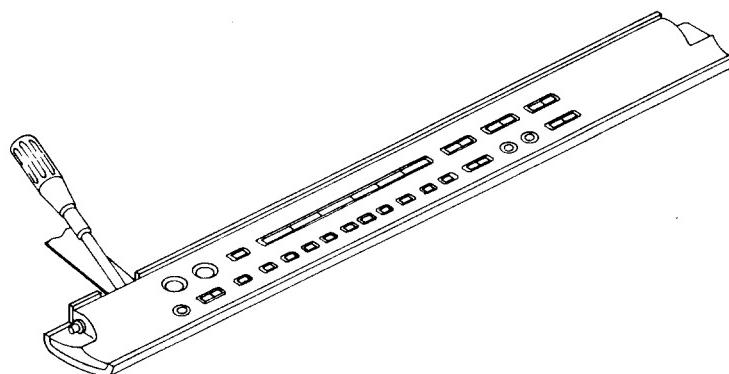
Remove the two screws C holding the door gear and the door ass'y.



4. Operation switch pc board check

Insert the screwdriver (-) between the door panel and the door as shown below.

Lift up the door panel and remove the door panel.



5. Front enhance, multi source, and power amplifier pc board check

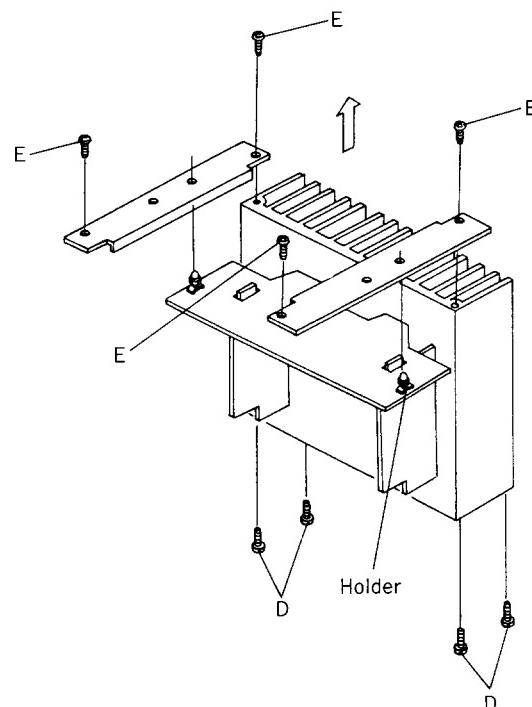
Remove the top cover and the bottom board.

Remove the four screws D from the bottom side.

Remove the four screws E.

Remove the two brackets from the holders.

Lift up the radiator to the arrow mark as shown below.

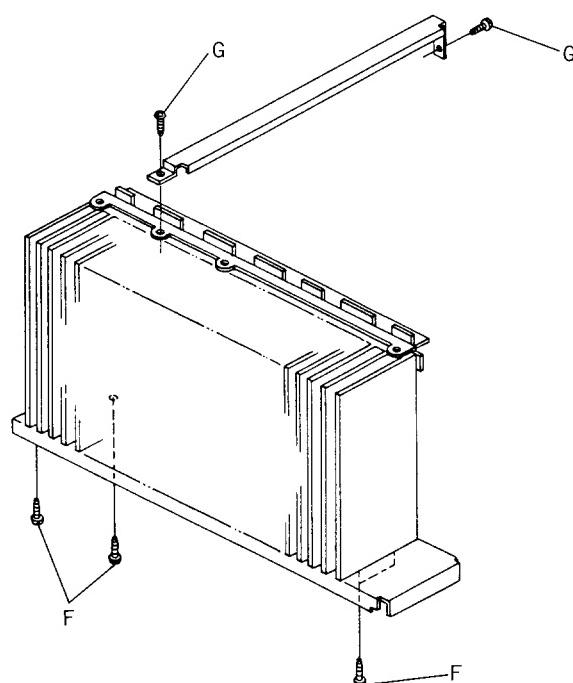


6. Front and center power amplifier pc board check

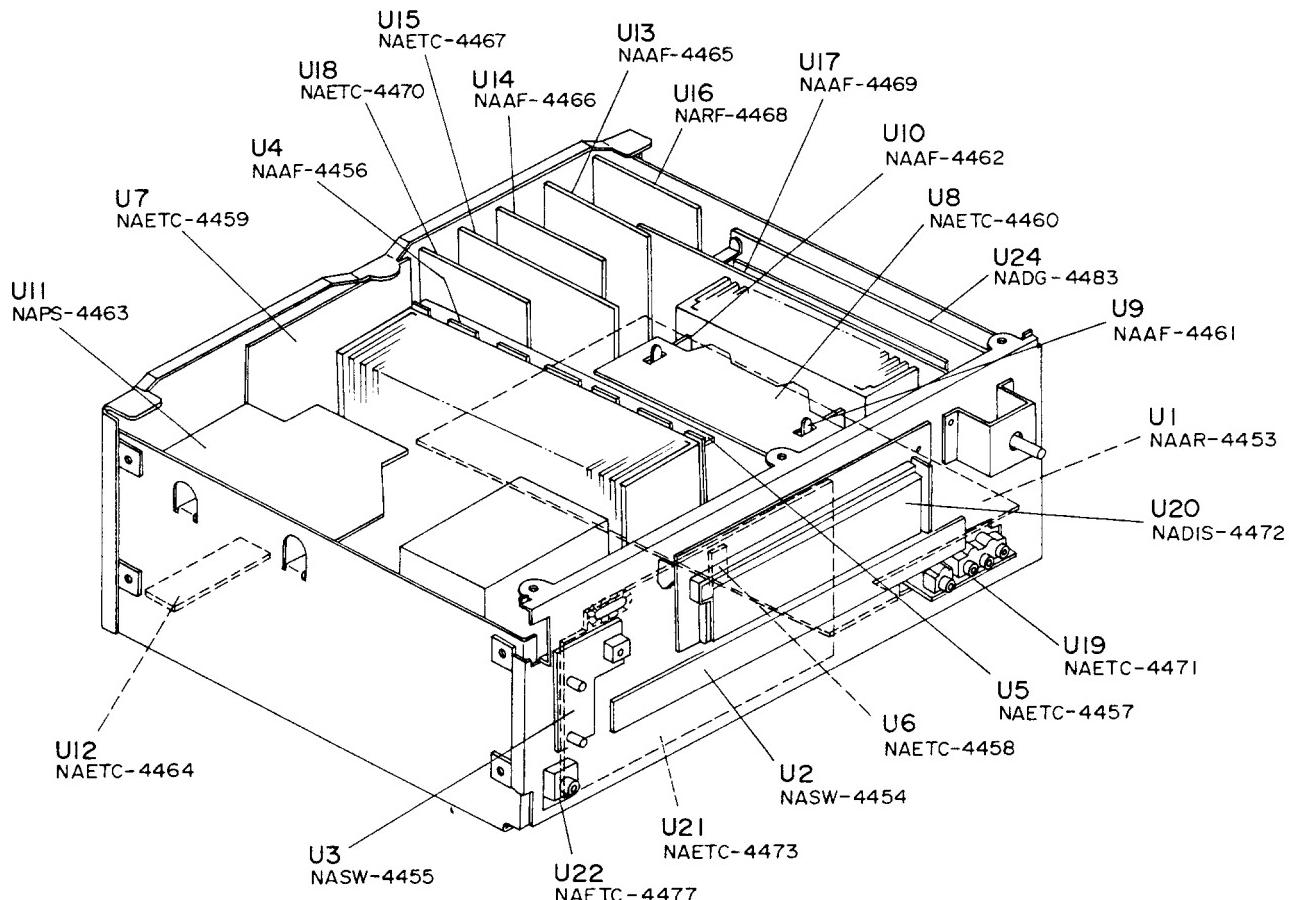
Remove the front enhance,multi source, and rear power amplifier pc board.

Remove the four screws F from the bottom side.

Remove the two screws G.



PRINTED CIRCUIT BOARD LOCATION VIEWS



- U1 MASTER MICROPROCESSOR CIRCUIT PC BOARD(NAAR-4453-1)... PART 1
- U2 SELECTOR SWITCH PC BOARD(NASW-4454-1).....PART 2
- U3 REMOTE CONTROL SENSOR PC BOARD(NASW-4455-1)....PART 2
- U4 FRONT AND CENTER POWER AMPLIFIER PC BOARD(NAAF-4456-1)....PART 7
- U5 POWER TRANSISTOR PC BOARD(NAETC-4457-1).....PART 7
- U6 RECTIFIER PC BOARD(NAETC-4458-1).....PART 7
- U7 SPEAKER TERMINAL PC BOARD(NAETC-4459-1).....PART 7
- U8 POWER SUPPLY CIRCUIT PC BOARD(NAETC-4460-1)....PART 4
- U9 REAR POWER AMPLIFIER PC BOARD(NAAF-4461-1)....PART 4
- U10 FRONT ENHANCE/MULTI SOURCE POWER AMPLIFIER PC BOARD
(NAAF-4462-1)....PART 4
- U11 POWER SUPPLY CIRCUIT PC BOARD(NAPS-4463-1).....PART 4
- U12 AC OUTLET PC BOARD(NAETC-4464-1).....PART 4
- U13 SELECTOR CIRCUIT PC BOARD(NAAF-4465-1)....PART 5
- U14 AUDIO SELECTOR PC BOARD(NAAF-4466-1)....PART 5
- U15 VIDEO COMPOSITE AND DISPLAY CIRCUIT PC BOARD
(NAETC-4467-1)PART 8
- U16 TUNER CIRCUIT PC BOARD(NARF-4468-1)....PART 2
- U17 BALANCE AND VOLUME CIRCUIT PC BOARD(NAAF-4469-1)....PART 6
- U18 VIDEO SELECTOR PC BOARD(NAETC-4470-1)....PART 8
- U19 INPUT TERMINAL PC BOARD(NAETC-4471-1)....PART 5
- U20 DISPLAY CIRCUIT PC BOARD(NADIS-4472-1)....PART 2
- U21 POWER SUPPLY CIRCUIT PC BOARD(NAETC-4473-1)....PART 4
- U22 HEADPHONE TERMINAL PC BOARD(NAETC-4474-1)....PART 7
- U23 OPERATION SWITCH PC BOARD(NASW-4475-1)...PART 2
- U24 DSP CIRCUIT PC BOARD(NADG-4483-1)....PART 3

ADJUSTMENT PROCEDURES

• Preparation

1. Input

FM mono: 1kHz, 75kHz devi., 60dB/ μ V

FM stereo: 1kHz, L+R 67.5kHz devi.,

Pilot signal 19kHz 7.5kHz devi.

AM: 400Hz 30% mod.

2. Outputs

Connect the non-inductive type resistors of 8ohms to the front speaker, center speaker, and rear speaker terminals unless otherwise noted.

3. Standard Knob Position

VOLUME Maximum

Amplifier Section

1. Idling Current Adjustment (Front)

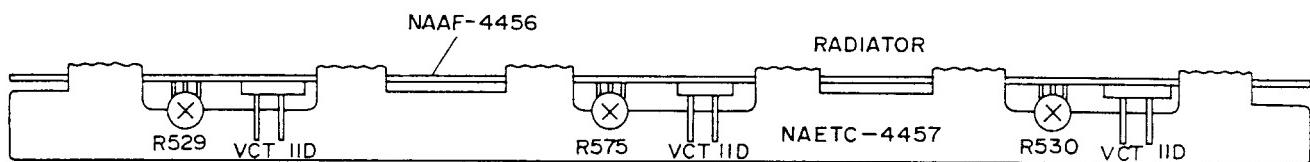
Connect the DC voltmeter to the terminals IID and VCT on the pre./main amplifier pc board. Adjust the semi-fixed resistors R529 and R530 so that the indication of voltmeter is 6 ± 0.5 mV.

Note: Open load, Adjust after switching on for 5 minutes.

2. Idling Current Adjustment (Center)

Connect the DC voltmeter to the terminals IID and VCT on the rear and center amplifier pc board. Adjust the semi-fixed resistor R575 so that the indication of voltmeter is 6 ± 0.5 mV.

Note: Open load, Adjust after switching on for 5 minutes.



Pre./main amplifier pc board

FM section

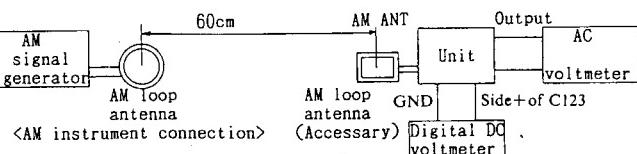
Item	Step	Connection of instrument	FM SG output	Stereo modulator output	Tuning frequency	Output indicator	Adjustment point	Adjust for	Remarks
FM IF/RF	1	Fig. 1	99.1MHz 1kHz, 75kHz devi. 65dBf (60dB)		99.1MHz	DC voltmeter	L101	$0 \pm 20mV$	FM MUTE/MODE switch: OFF(MONO) Repeat the steps 1 and 3 until no further adjustment is necessary.
	2					AC voltmeter	IPT on the front end	Maximum	
	3					Distortion analyzer	L102	Minimum	
VCO		Fig. 2	99.1MHz 1kHz, 75kHz devi. 65dBf (60dB)		99.1MHz	Frequency counter	R201	$19kHz \pm 10Hz$	FM MUTE/MODE switch: ON (STEREO)
Stereo Distortion		Fig. 3	99.1MHz, Ext mod., .65dBf (60dB)	Channel L or R 1kHz	99.1MHz	Distortion analyzer	IPT on the front end	Minimum	Don't turn more than $\pm 180^\circ$
Stereo Separation	1	Fig. 3	99.1MHz Ext. modulation 65dBf (60dB)	Channel L 1kHz	99.1MHz	Channel R AC voltmeter	R202	Minimum	Maximum and same separation.
	2			Channel R 1kHz		Channel L AC voltmeter		Minimum	
Tuning Level		Fig. 3	99.1MHz 19.2dBf (14dB)		99.1MHz	TUNED indicator	R101	Light on	FM MUTE/MODE switch: ON (STEREO)

AM section

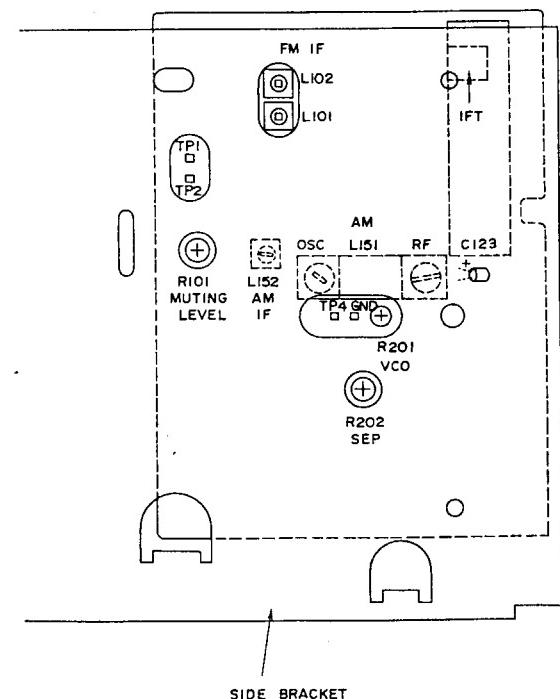
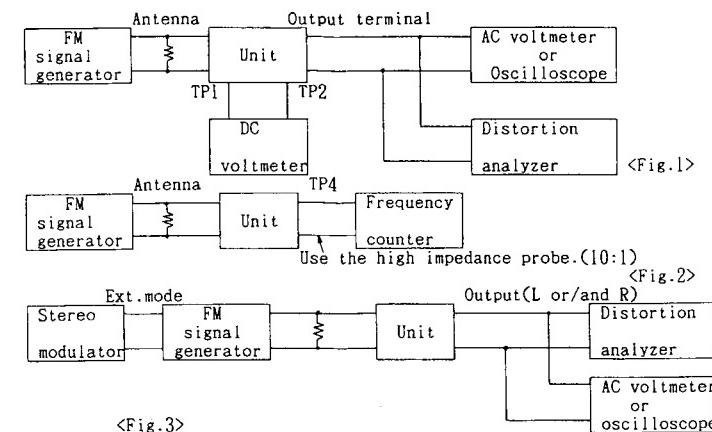
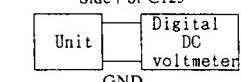
Step	AM SG output	Tuning frequency	Output indicator	Adjustment point	Adjust for
1		530kHz (531kHz)	Digital DC voltmeter	OSC coil on RF block(L151)	$1.3 \pm 0.1V$
2	600kHz (603kHz) 400Hz, 30% mod. 60dB/m	600kHz (603kHz)	AC voltmeter	RF coil on RF block(L151)	Maximum
3	990kHz 400Hz, 30% mod. 60dB/m	990kHz	AC voltmeter	L152	Maximum

(): 9kHz step model

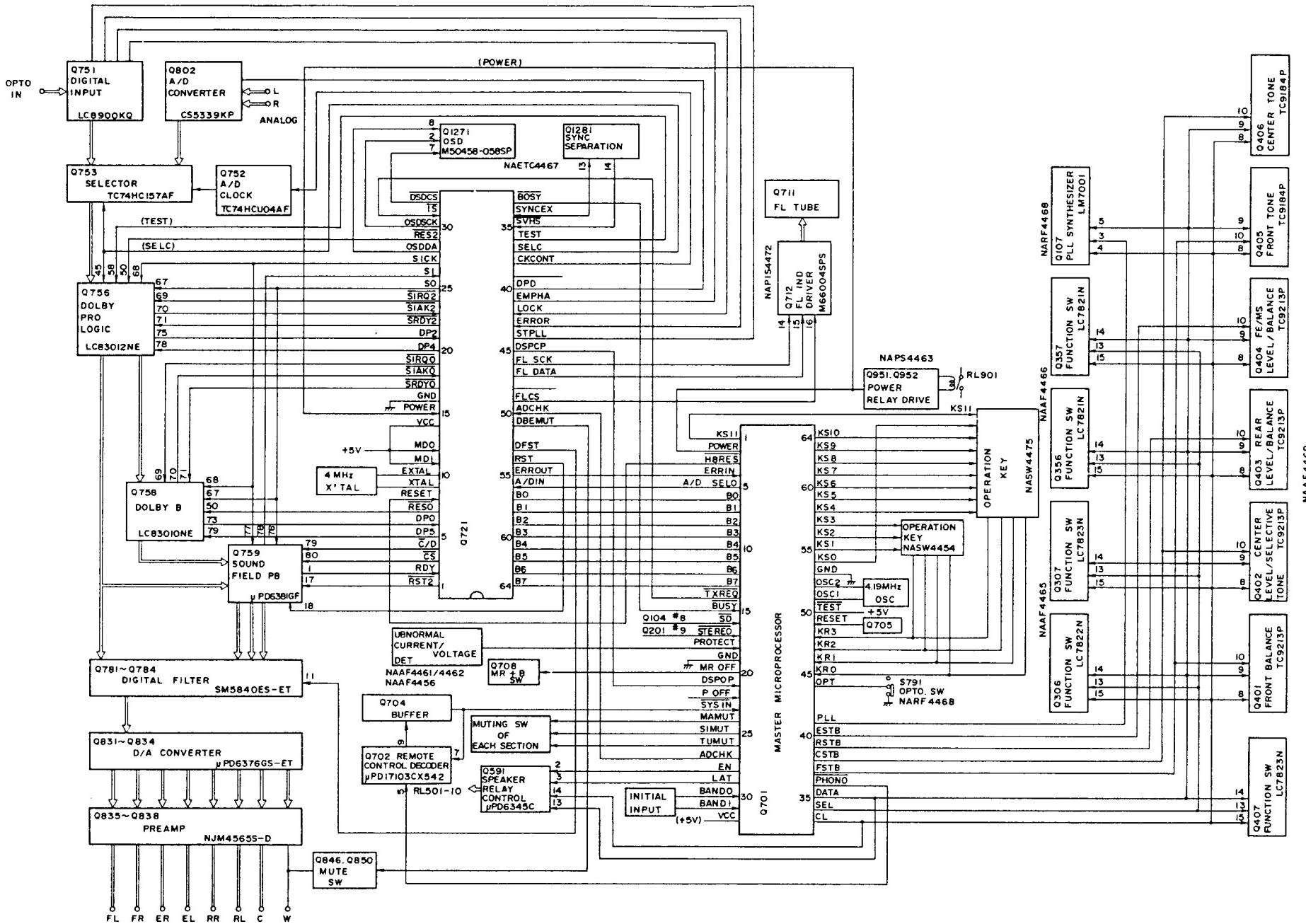
Reference Specifications

FM tuned voltage: 87.50MHz - 108.00MHz
 $1.6 \pm 0.4V - 7.9 \pm 0.4V$ AM tuned voltage: 530kHz $1.3 \pm 0.5V$
1710kHz $7.2 \pm 0.5V$ Auto stop level: AM: Less than 65dB/m
FM: Less than 18dB μ 

Confirmation of tuned voltage



MICROPROCESSOR CONNECTION DIAGRAM



No.	Symbol	I/O	Logic	Function
1	KS11	O	H	Auto scan output terminal.
2	POWER	O	H	Power relay control output terminal.
3	H8RES	O	H	Connect to the terminal RESET of DSP control microprocessor HD6433258P.
4	ERRIN	I	H	Connect to the terminal ERROUT of DSP control microprocessor .
5	A/DSEL	O	H	Connect to the terminal A/DSELI of DSP control microprocessor .
6	B0	B		Connect to the terminal B0 of DSP control microprocessor .
7	B1	B		Connect to the terminal B1 of DSP control microprocessor .
8	B2	B		Connect to the terminal B2 of DSP control microprocessor .
9	B3	B		Connect to the terminal B3 of DSP control microprocessor .
10	B4	B		Connect to the terminal B4 of DSP control microprocessor .
11	B5	B		Connect to the terminal B5 of DSP control microprocessor .
12	B6	B		Connect to the terminal B6 of DSP control microprocessor .
13	B7	B		Connect to the terminal B7 of DSP control microprocessor .
14	TXREQ	O	L	Connect to the terminal SI of DSP control microprocessor .
15	BUSYIN	I	L	Connect to the terminal BUSY of DSP control microprocessor .
16	SD	I	L	FM broadcast detection input terminal.
17	STEREO	I	L	FM stereo broadcast detection input terminal.Control the indicator STEREO.
18	PROTECT	I	H	Detection input terminal for the operation of protection circuit.Control the speaker protection relay.
19	Vdisp			Power supply terminal for FL tube.Connect to the ground.
20	MROFF	O	H	Multi room remote control transmitter control output terminal. Turn off the remote control signal from the other room.
21	DSPCHK	I	H	Connect to the terminal DSPOPEI of DSP control microprocessor .
22	POFF	I	L	Detection input terminal for the stoppage of electric current.
23	SYSIN	I	H	System code input terminal.Connect to the terminal STB of front tone control IC.
24	MAMUT	O	H	Audio main muting output terminal.
25	MSMUT	O	H	Audio multi source muting output terminal.
26	TUMUT	O	H	Tuner muting output terminal
27	AR/DT	O		Connect to the terminal ADCHK of DSP control microprocessor .
28	EN	O	H	Connect to the terminal EN of output extended IC μ PD6345C.
29	LAT	O	L	Connect to the terminal LAT of output extended IC μ PD6345C.
30	BAND0	I	H	Initializing setting input terminal for FM/AM reception band.
31	BAND1	I	H	
32	VCC			Power supply terminal.(+5V)
33	FVTCL	O	H	Connect to the terminal CL of analog switches LC7821N,LC7822N and LC7823N,terminal CK of electro volume TC9213P,terminal SCK of μ PD6345 and terminal CK of tone control IC TC9184P.

FM/AM band setting

INITIALIZING INPUT		REGION	BAND	FREQUENCY RANGE	CHANNEL SPACE
BAND1	BAND0				
0	0	U.S.A	FM	87.50~108.00MHz	50kHz
			AM	530~1710kHz	10kHz
0	1	Europe 1	FM	87.50~108.00MHz	50kHz
			AM	522~1611kHz	9kHz
1	0	Europe 2	FM	87.50~108.00MHz	50kHz
			AM	531~1602kHz	9kHz
1	1	.Japan	FM	76.0~90.0MHz	100kHz
			AM	522~1611kHz	9kHz

Key matrix

	KR0	KR1	KR2	KR3
KS0	POWER	REC OUT	MULTI SOURCE	MR OFF
KS1	VIDEO-1	VIDEO-2	VIDEO-3	VIDEO-4
KS2	VIDEO-5	VIDEO-6	TAPE-1	TAPE-2
KS3	FM	AM	PHONO	CD
KS4	MAIN	REMOTE	DIMMER	DIRECT
KS5	CLASS-A	CLASS-B	CLASS-C	CLASS-D
KS6	CLASS-E	CLASS-F	TEN-9	TEN-0
KS7	TEN-1	TEN-2	TEN-3	TEN-4
KS8	TEN-5	TEN-6	TEN-7	TEN-8
KS9	CLASS SCAN	TUNER DOWN	TEN-UP	SELECTIVE TONE
KS10	FM MUTING	MEMORY	SURROUND DOWN	SURROUND UP
KS11	PR DOWN	PR UP	PC DOWN	PC UP

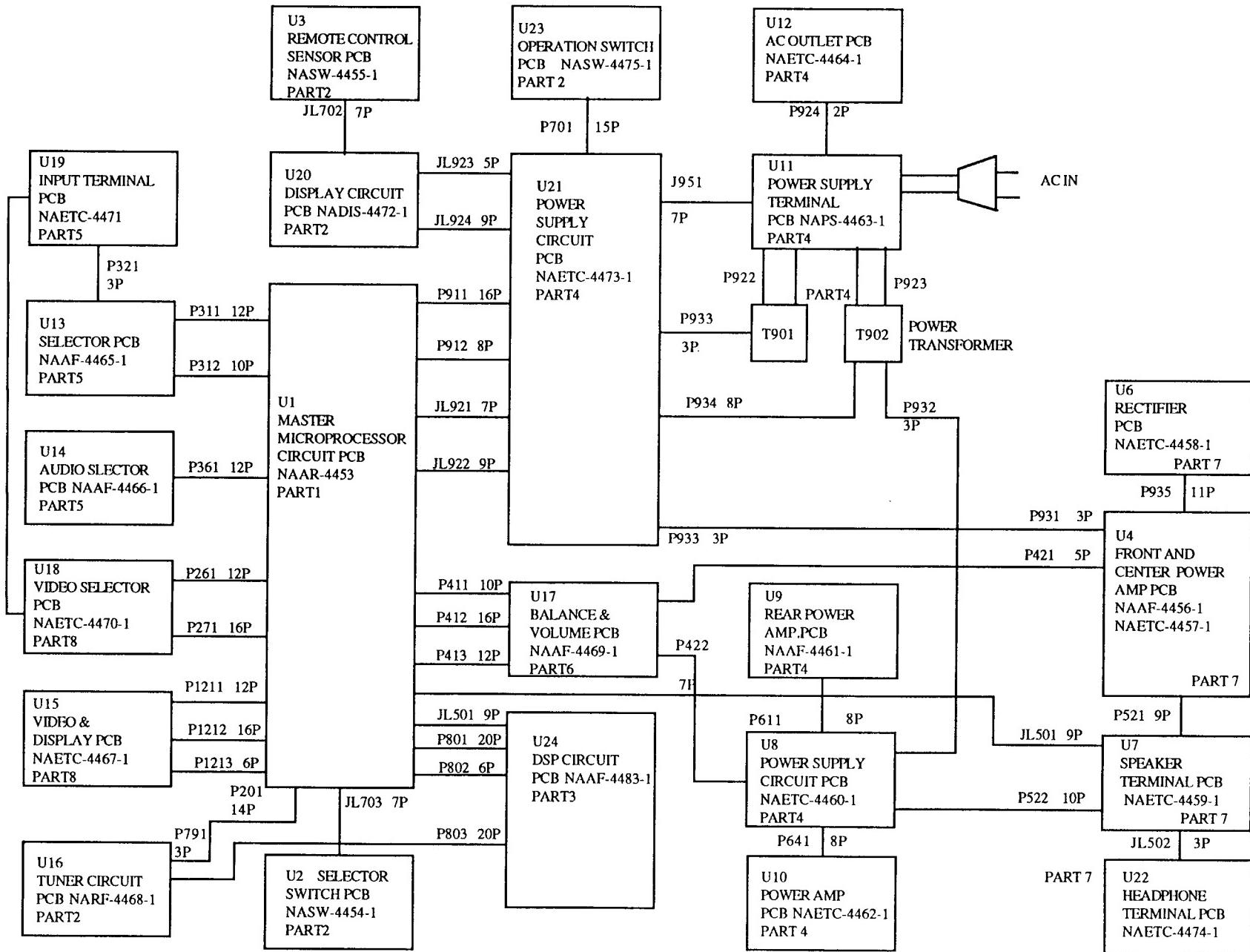
NOTE: PR:PARAMETER SELECTOR

PC:PARAMETER CONTROLLER

No.	Symbol	I/O	Logic	Function
64	KS10	O	H	Auto scan output terminals
63	KS9	O	H	
62	KS8	O	H	
61	KS7	O	H	
60	KS6	O	H	
59	KS5	O	H	
58	KS4	O	H	
57	KS3	O	H	
56	KS2	O	H	
55	KS1	O	H	
54	KS0	O	H	
53	GND			Ground terminal
52	OSC2			Main system clock terminals.
51	OSC1			Connect the ceramic oscillator 4.19MHz.
50	TEST			Test terminal.Connect to the terminal VCC.
49	RESET	I	H	Reset input terminal.
48	KR3	I	H	Key input terminals.
47	KR2	I	H	
46	KR1	I	H	
45	KR0	I	H	
44	OPT	I	H	Changeover signal input terminal for optical. Check when the input selector switch is turned the VIDEO-4.
43				Not used.
42				Not used.
41	PLCE	O	H	Connect to the terminal CE of PLL IC LM7001.
40	EVSTB	O	H	Connect to the terminal STB of enhance volume control IC TC9213P-C.
39	RVSTB	O	H	Connect to the terminal STB of rear volume control IC TC9213P-R.
38	CVTSTB	O	H	Connect to the terminal STB of center volume control IC TC9213P-C and the terminal STB of center tone control IC TC9184P-C.
37	FBTSTB	O	H	Connect to the terminal STB of front balance volume control IC TC9213P-C and the terminal STB of front tone control IC TC9184P-C.
36	PHONO	O	L	PHONO control output terminal.L when the selector switch is PHONO.
35	FVTDA	O	X	Connect to the terminal DI of analog switches LC7821N,LC7822N and LC7823N,terminal DATA of electro volume TC9213P,terminal SIN of μ PD6345 and terminal DATA of tone control IC TC9184P.
34	FCE	O	H	Connect to the terminal CE of analog switches LC7821N,LC7822N and LC7823N.

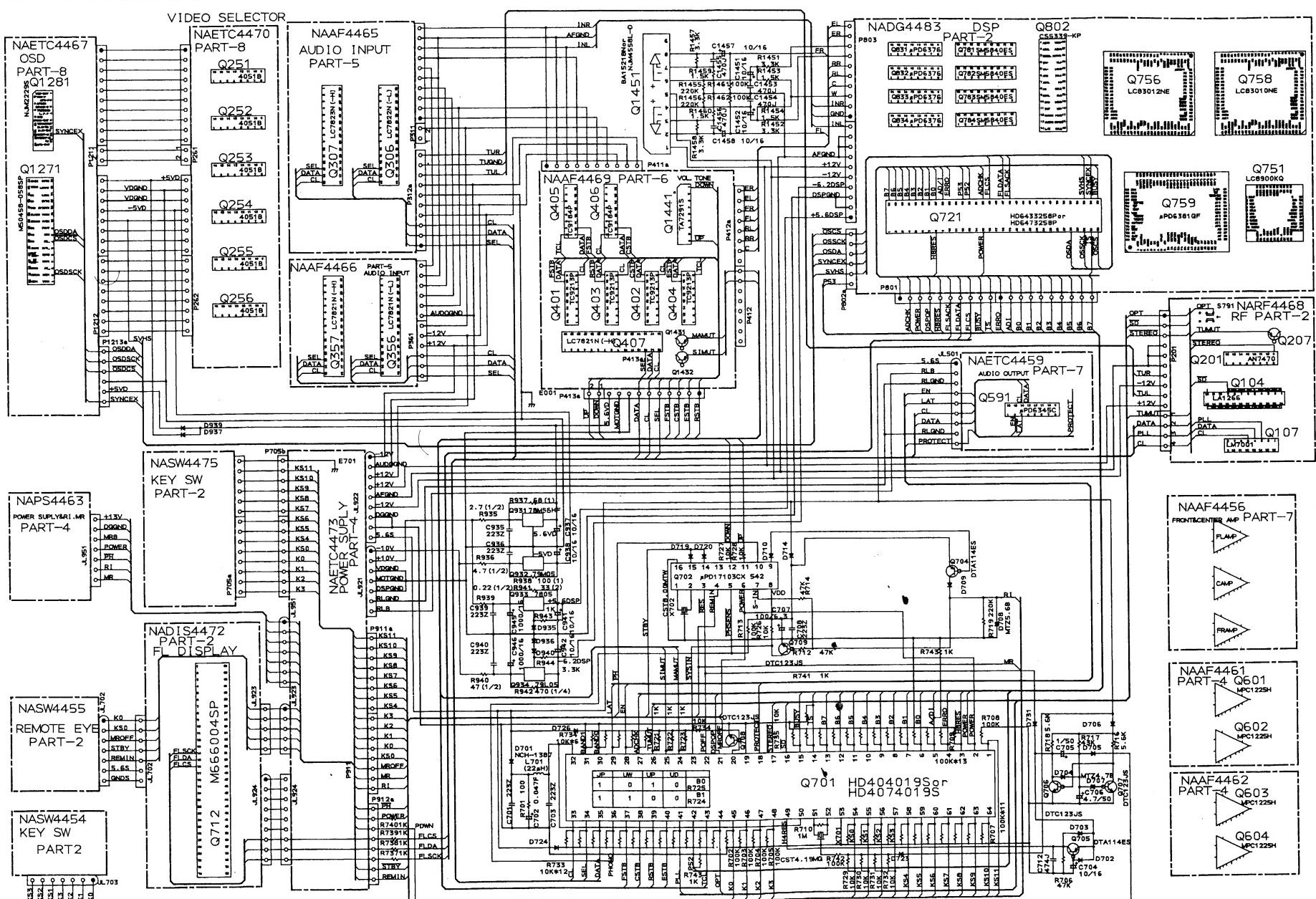
KS11	1	64	KS10
POWER	2	63	KS9
H8RES	3	62	KS8
ERRIN	4	61	KS7
A/DSEL	5	60	KS6
B0	6	59	KS5
B1	7	58	KS4
B2	8	57	KS3
B3	9	56	KS2
B4	10	55	KS1
B5	11	54	KS0
B6	12	53	GND
B7	13	52	OSC2
TXREQ	14	51	OSC1
BUSYIN	15	50	TEST
SD	16	49	RESET
STEREO	17	48	KR3
PROTECT	18	47	KR2
Vdisp	19	46	KR1
MROFF	20	45	KR0
DSPCHK	21	44	OPT
POFF	22	43	
SYSIN	23	42	
MAMUT	24	41	PLCE
MSMUT	25	40	EVSTB
TUMUT	26	39	RVSTB
AR/DT	27	38	CVTSTB
EN	28	37	FBTSTB
LAT	29	36	PHONO
BAND0	30	35	FVTDA
BAND1	31	34	FCE
VCC	32	33	FVTC

PRINTED CIRCUIT BOARD CONNECTION DIAGRAM



SCHEMATIC DIAGRAM PART 1

MASTER MICROPROCESSOR SECTION



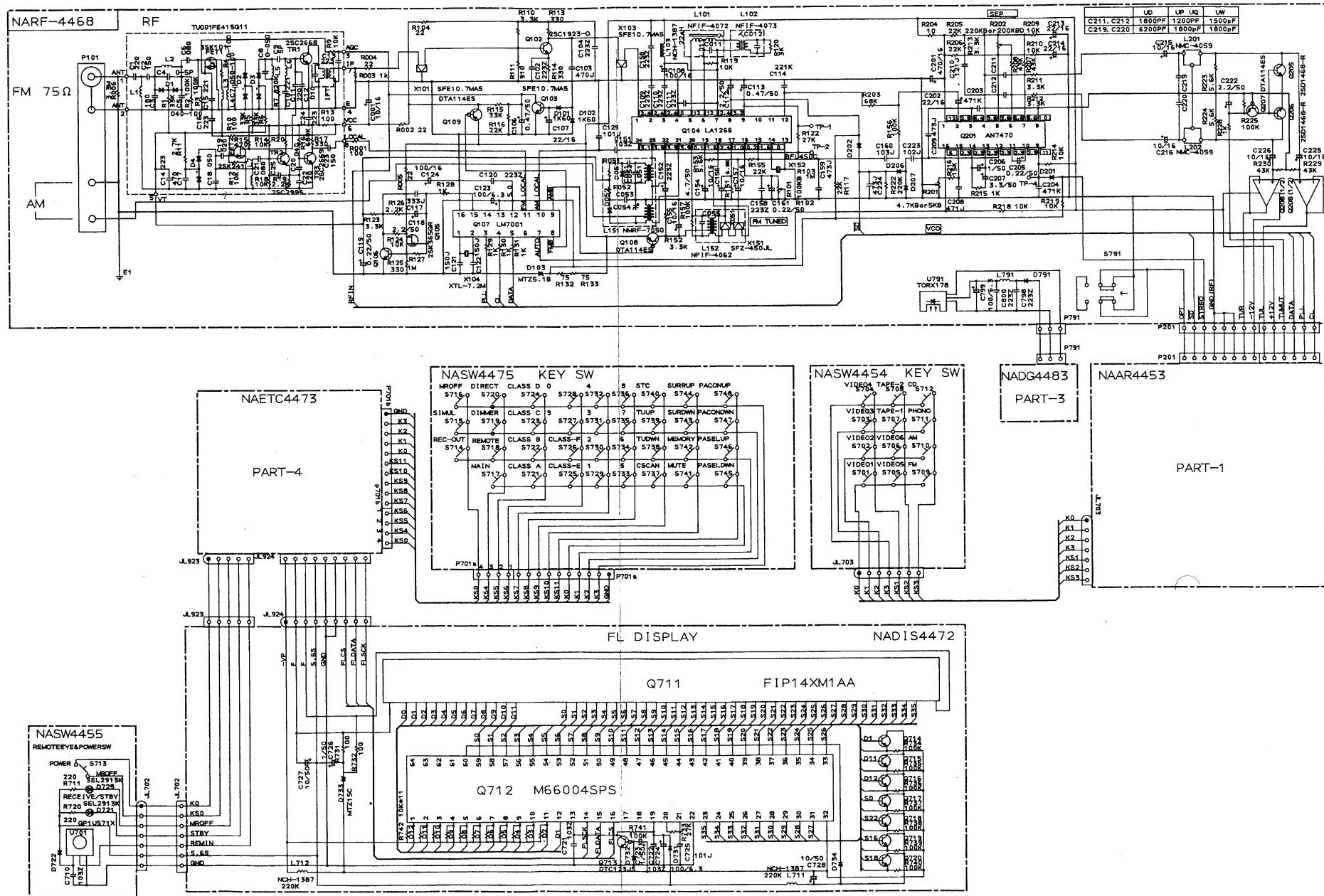
ONKYO CORPORATION

TX-SV909PRO TX-SV909PRO

A B C D E F G H

SCHEMATIC DIAGRAM PART 2

TUNER SECTION



PRINTED CIRCUIT BOARD-PARTS LIST

MASTER MICROPROCESSOR CIRCUIT PC BOARD(NAAR-4453-1/1A)			MARK	CIRCUIT NO.	PART NO.	DESCRIPTION
MARK	CIRCUIT NO.	PART NO.	DESCRIPTION			
	ICs					
Q701	22240599	HD404019S or HD4074019S(Before change)		P201a P261a,P311a	25055501 25055500	NPLG-14P476 NPLG-12P475
Q702	22240596	μ PD17103CX-542		P262a,P412a	25055502	NPLG-16P477
Q931	222780565JRC	78M56		P312a,P411a	25055499	NPLG-10P474
Q932	222790055	79M05		P361a,P413a	25055500	NPLG-12P475
Q933	222780050	7805		P801a,P803a	25055504	NPLG-20P479
Q934	222790053	79L05		P802a,P1213a	25055497	NPLG-6P472
Q1451	22240247 or 22240293	BA15218N or NJM4558L-D		P911a,P1212a P912a P1211a	25055502 25055498 25055500	NPLG-16P477 NPLG-8P473 NPLG-12P475
	Transistors					
Q704,Q705	2214350 or 2213510	RN2202 or DTA114ES			Radiators 27160209	
Q706-Q709	2214660 or 2213640	RN1205 or DTC123JS			27160221	RAD-67 RAD-74
Q710	2213710	DTA123JS(44~743p'cs.)			82143006	3P+6FN(BC),Pan head
	Diodes					
D701-D706	223163 or	1SS133 or	TUNER CIRCUIT PC BOARD(NARF-4468-1/1A)			
D709,D710	223205	1SS270A	MARK	CIRCUIT NO.	PART NO.	DESCRIPTION
D707	224450472	MTZ4.7B				Front end
D708	224450562	MTZ5.6B		TU001	240089	FE415-G11
D714,D715	223163 or	1SS133 or				Opto. receiving module
D719,D720	223205	1SS270A		U791	24120034	TORX178
D726	223163 or	1SS133 or				ICs
D935,D936	223205	1SS270A			Q104	22240039
D937,D939	22380046 or 22380032	AM01Z or 1SR139-100			Q107	22240090
D940	223163 or	1SS133 or			Q201	22240242
D1702,D1703	223205	1SS270A			Q208	22240247 or
	Coil					BA15218N or
L701	233411K220	NCH-1387			22240293	NJM4558L-D
	Ceramic oscillators					
X701	3010163	CST4.19MGW			Q102	2211723
X702	3010190	CST8.00MTW			Q103,Q106	2SC1923-O 2213284 or
	Capacitors					2SC1740S-R or
C702	3000059	0.047F,5.5V,Super				2212115
C703,C712	375524744	0.47 μ F $\pm 5\%$,50V,Plastic				2SC2458-GR
C704	354740109	1 μ F,16V,Elect.				2SK365-GR
C705	354780109	1 μ F,50V,Elect.				2214350 or
C706,C713	354780479	4.7 μ F,50V,Elect.				RN2202 or
C707	354721019	100 μ F,6.3V,Elect.				2213510
C937,C938	354741009	10 μ F,16V,Elect.				DTA114ES
C941,C942	354741009	10 μ F,16V,Elect.				Transistors
C945,C946	354741029	1000 μ F,16V,Elect.				Q205,Q206
C1451,C1452	354741009	10 μ F,16V,Elect.				2212794
C1457,C1458	354741009	10 μ F,16V,Elect.				2214350 or
	Resistors					Q207
R707	49163104411	100k Ω \times 11,1/10W,Array				2213510
R709	49163104413	100k Ω \times 13,1/10W,Array				Diodes
R733	49163103412	10k Ω \times 12,1/10W,Array				Q101,D102
R734	49163103406	10k Ω \times 6,1/10W,Array				223132
R935	442520274	2.7 Ω $\pm 5\%$,1/2W,Metal oxide film				1K60
R936	442520474	4.7 Ω $\pm 5\%$,1/2W,Metal oxide film				MTZ5.1B
R937	441626804	68 Ω $\pm 5\%$,1W,Metal oxide film				D103
R938	441621014	100 Ω $\pm 5\%$,1W,Metal oxide film				224450512
R939	442522294	0.22 Ω $\pm 5\%$,1/2W,Metal oxide film				D201,D202
R940	442524704	47 Ω $\pm 5\%$,1/2W,Metal oxide film				223163 or
R941	441723304	33 Ω $\pm 5\%$,2W,Metal oxide film				1SS133 or
						223205
						1SS270A
						Ceramic filters
						3010071
						SFE10.7MA5(RED)
						X101,X103
						3010123
						SFZ-450JL
						X151
						3010076
						BFU-450C
						X152
						Transformers & Coils
						L101
						233401
						L102
						233402
						L103
						233411K220
						L152
						232139
						L152
						NMF-4062
						L201,L202
						233355A
						L791
						NMC-4059
						L791
						NCH-1387

PRINTED CIRCUIT BOARD PARTS LIST

CAUTION: Replacement for transistor of mark Δ , if necessary must be made from the same beta group (HFE) as original type.

MARK	CIRCUIT NO.	PART NO.	DESCRIPTION	MARK	CIRCUIT NO.	PART NO.	DESCRIPTION
		Resistors				Capacitors	
Δ	R901	431523355	3.3M $\Omega \pm 10\%$,1/2W,Solid <D>	C915	354752229	22000 μ F,25V,Elect.	
	R951	442520824	8.2 $\Omega \pm 5\%$,1/2W,Metal oxide film	C916	354751029	1000 μ F,25V,Elect.	
		Terminals		C919,C920	,354741009	10 μ F,16V,Elect.	
P961		25045293	HSJ-1003-01-012	C921	354751029	1000 μ F,25V,Elect.	
P962		25045172	HSJ-1003-01-020	C923	354741009	10 μ F,16V,Elect.	
		25060092	NTM-1S33	C924	354762219	220 μ F,35V,Elect.	
P922,P923		25060103	2P-10	C925	354782219	220 μ F,50V,Elect.	
		Relay		C928	354754719	470 μ F,25V,Elect.	
Δ	RL901	25065248	NRL-1P15A-DC12-29	C933,C935	354742229	2200 μ F,16V,Elect.	
		Fuses		C934	354744719	470 μ F,16V,Elect.	
Δ	F901	252053	8A ST-6 <D>			Resistors	
Δ	F902	252049	4A ST-6 <D>	R903,R904	442522294	0.22 $\Omega \pm 5\%$,1/2W,Metal oxide film	
Δ	F903	252077	4A-SE-EAK <G>	R907	441620824	8.2 $\Omega \pm 5\%$,1W,Metal oxide film	
Δ	F904	252074	2A-SE-EAK <G>	R908	442521804	18 $\Omega \pm 5\%$,1/2W,Metal oxide film	
		Fuseholders		R913	441623304	33 $\Omega \pm 5\%$,1W,Metal oxide film	
Δ	F901a,F902a	250113	SN5051 <D>	R914	441623914	390 $\Omega \pm 5\%$,1W,Metal oxide film	
Δ	F903a,F904a	25050065	YSH403T <G>	R915	442520824	8.2 $\Omega \pm 5\%$,1/2W,Metal oxide film	
		Socket		R917	442523314	330 $\Omega \pm 5\%$,1/2W,Metal oxide film	
JL951		25050529	NSCT-7P352	R918	442522204	22 $\Omega \pm 5\%$,1/2W,Metal oxide film	
		Bracket		R920,R922	442520104	1 $\Omega \pm 5\%$,1/2W,Metal oxide film	
		27141059	Ground	R931,R932	442522294	0.22 $\Omega \pm 5\%$,1/2W,Metal oxide film	
						Sockets	

REAR POWER AMPLIFIER PC BOARD(NAAF-4461-1)

MARK	CIRCUIT NO.	PART NO.	DESCRIPTION
		ICs	
	Q601,Q602	22240108	μ PC1225H
		Transistors	
	Q603,Q604	2213284	2SC1740S-R
*	Q605,Q606	2202063,	2SC4511-O,
*		2202064 or	2SC4511-Y or
*		2202066	2SC4511-P
*	Q607,Q608	2202053,	2SA1725-O,
*		2202054 or	2SA1725-Y or
*		2202056	2SA1725-P
	Q609,Q610	2211732 or	2SC1845-F or
		2211733	2SC1845-E
		Capacitors	
C601,C602		353781009	10 μ F,50V,Elect.
C605,C606		353721019	100 μ F,6.3V,Elect.
C609,C610		374723334	0.033 μ F $\pm 5\%$,50V,Plastic
		Resistors	
R613,R614		4500027	0.22 Ω ,2W,Metal plate
		Plug	
P611		25055333	NPLG-8P316 -

FRONT ENHANCE/MULTI SOURCE POWER AMPLIFIER PC BOARD(NAAF-4462-1)

MARK	CIRCUIT NO.	PART NO.	DESCRIPTION
		ICs	
	Q631,Q632	22240108	μ PC1225H
		Transistors	
	Q633,Q634	2213284	2SC1740S-R
*	Q635,Q636	2202063,	2SC4511-O,
*		2202064 or	2SC4511-Y or
*		2202066	2SC4511-P
*	Q637,Q638	2202053,	2SA1725-O,
*		2202054 or	2SA1725-Y or
*		2202056	2SA1725-P

POWER SUPPLY CIRCUIT PC BOARD(NAPS-4463-1/1A)

MARK	CIRCUIT NO.	PART NO.	DESCRIPTION
		Transistors	
		Q951	2214680 or
			2213650
		Q952,Q963	2213560 or
		Q961,Q962	221282
			Diodes
		D951-D954	22380046 or
			22380032
		D955	223163 or
		D961-D965	223205
			Power transformer
		T903	2300670
			2300672
			Capacitors
		C901	3500065A
		C952	354761019
		C961	354741009
		C962	374724724
			DE7150FZ103P AC400V/125V,IS
			100 μ F,35V,Elect.
			10 μ F,16V,Elect.
			4700pF $\pm 5\%$,50V,Plastic

NOTE:<D>:120V model only
<G>: 220V model only

NOTE: THE COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

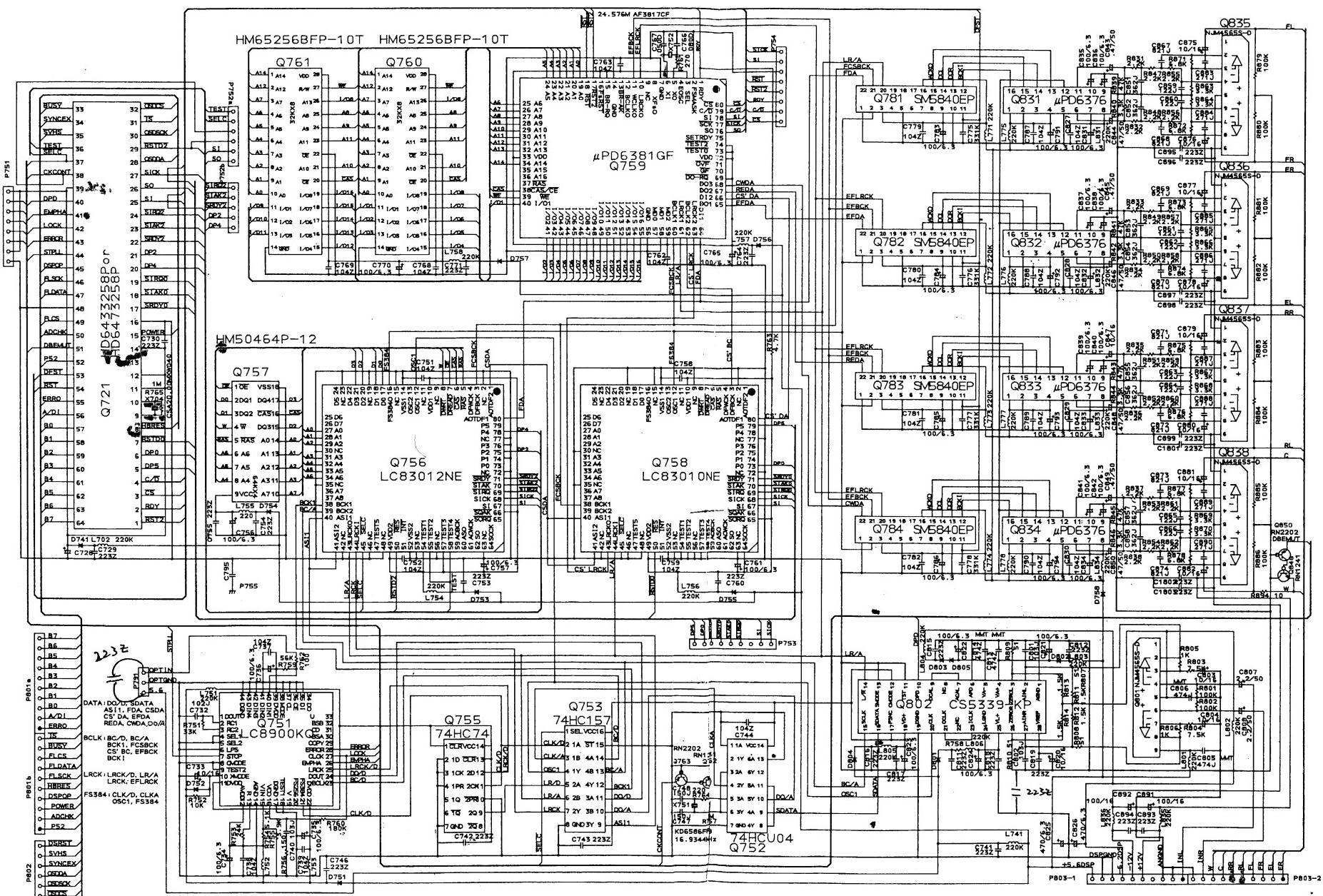
MARK	CIRCUIT NO.	PART NO.	DESCRIPTION	MARK	CIRCUIT NO.	PART NO.	DESCRIPTION
		Transistors				Transistors	
Q639,Q640	2211732 or	2SC1845-F or		Q517,Q518	2202024 or	2SB1186A-D or	
	2211733	2SC1845-E		Q569	2202025	2SB1186A-E	
		Capacitors		* Q519,Q520	2201482 or	2SC3821-R or	
C631,C632	353781009	10 μ F,50V,Elect.		* Q570	2201483	2SC3821-O	
C635,C636	353721019	100 μ F,6.3V,Elect.		* Q521,Q522	2201472 or	2SA1302-R or	
C639,C640	374723334	0.033 μ F \pm 5%,50V,Plastic		* Q571	2201473	2SA1302-O	
		Resistors		Q523,Q524	2211633 or	2SC2229-O or	
R643,R644	4500027	0.22 Ω ,2W,Metal plate		Q566,Q572	2211634	2SC2229-Y	
		Plug		Q562	2213354	2SA933S-R	
P641	25055333	NPLG-8P316		Q564,Q567	2213284	2SC1740S-R	
					Diodes		
				D501-D510	223163 or	1SS133 or	
				D561-D565	223205	1SS270A	
				L501,L502	231209	S-0.4A	
D611,D612	223163 or	1SS133 or		L561	231209	S-0.4A	
	223205	1SS270A			Capacitors		
D902	22380038	RBV602		C501,C502	354781009	10 μ F,50V,Elect.	
		Coils		C505,C506	354742219	220 μ F,16V,Elect.	
L601,L602	231209	S-0.4A		C513,C514	354780229	2.2 μ F,50V,Elect.	
L631,L632	231209	S-0.4A		C527-C530	374724734	0.047 μ F \pm 5%,50V,Plastic	
		Capacitors		C533-C536	354794709	47 μ F,100V,Elect.	
C611,C612	374724734	0.047 μ F \pm 5%,50V,Plastic		C561	354781009	10 μ F,50V,Elect.	
C641,C642	374724734	0.047 μ F \pm 5%,50V,Plastic		C563	354742219	220 μ F,16V,Elect.	
C909,C910	3504254	8200 μ F,50V,Elect.		C567	354780229	2.2 μ F,50V,Elect.	
		Resistors		C574,C575	374724734	0.047 μ F \pm 5%,50V,Plastic	
R615-R618	442520824	8.2 Ω \pm 5%,1/2W,Metal oxide film		C577,C578	354794709	47 μ F,100V,Elect.	
R645-R648	442520824	8.2 Ω \pm 5%,1/2W,Metal oxide film		C905,C906	3504253	15000 μ F,69V,Elect.	
		Socket		R527,R528	442522704	27 Ω \pm 5%,1/2W,Metal oxide film	
P422	2009990213	NSAS-14P0312		R529,R530	5210240	N06HR10KBE,Semi-fixed	
		Plug		R533,R534	442529104	91 Ω \pm 5%,1/2W,Metal oxide film	
P522a	25055140	NPLG-10P124		R535,R536	442522714	270 Ω \pm 5%,1/2W,Metal oxide film	
		Terminal		R537,R538	4500031	0.22 Ω ,5W,Metal plate	
P932	25060073	3P-7.5		R539,R540	442520824	8.2 Ω \pm 5%,1/2W,Metal oxide film	
				R541,R542	441720824	8.2 Ω \pm 5%,2W,Metal oxide film	
				R543,R544	442522724	2.7k Ω \pm 5%,1/2W,Metal oxide film	
				R549-R552	442520104	1 Ω \pm 5%,1/2W,Metal oxide film	
P902	25050388	NSCT-6P215,Socket		R557,R558	442520104	1 Ω \pm 5%,1/2W,Metal oxide film	
P924	2009990078	NSAS-4P0115,Socket <D>		R574	442522704	27 Ω \pm 5%,1/2W,Metal oxide film	
				R575	5210240	N06HR10KBE,Semi-fixed	
				R577	442529104	91 Ω \pm 5%,1/2W,Metal oxide film	
				R578	442522714	270 Ω \pm 5%,1/2W,Metal oxide film	
				R579	4500031	0.22 Ω ,5W,Metal plate	
				R580	442520824	8.2 Ω \pm 5%,1/2W,Metal oxide film	
				R581	441720824	8.2 Ω \pm 5%,2W,Metal oxide film	
				R582	442522724	2.7k Ω \pm 5%,1/2W,Metal oxide film	
				R585,R586	442520104	1 Ω \pm 5%,1/2W,Metal oxide film	
				R589	442520104	1 Ω \pm 5%,1/2W,Metal oxide film	
				R1511	442520104	1 Ω \pm 5%,1/2W,Metal oxide film	
					Socket		
				P421	2009990024	NSAS-10P0048	
					Plugs		
				P511-P514	25055329	NPLG-4P312	
				P521a	25055139	NPLG-9P123	
				P561,P562	25055329	NPLG-4P312	
				P935	25055336	NPLG-11P319	
					Terminals		
				P515,P516	25065404	2P-5L	
				P563	25065404	2P-5L	
				P931	25060073	3P-7.5	

PRINTED CIRCUIT BOARD PARTS LIST

RECTIFIER PC BOARD(NAETC-4458-1)			MARK	CIRCUIT NO.	PART NO.	DESCRIPTION
MARK	CIRCUIT NO.	PART NO.			DESCRIPTION	
D901	22380044	RBV1506,Diode		Q831-Q834	22240555R2	μ PD6376GS-ET
				Q835-Q838	22240273	NJM4565S-D
Transistors						
HEADPHONE TERMINAL PC BOARD(NAETC-4474-1)			Q762		2213631 or	RN1241-A or
MARK	CIRCUIT NO.	PART NO.			2213632	RN1241-B
P504	25045376	YKB22-5138	Q763		2214350 or	RN2202 or
					2213510	DTA114ES
SPEAKER TERMINAL PC BOARD(NAETC-4459-1)			Q850		2214350 or	RN2202 or
MARK	CIRCUIT NO.	PART NO.			2213510	DTA114ES
		IC			Diodes	
Q591	22240211	μ PD6345C	D741		223163 or	1SS133 or
		Transistors	D751-D758		223205	1SS270A
Q691,Q692	2211732 or	2SC1845-F or	D801-D805		223163 or	1SS133 or
	2211733	2SC1845-E			223205	1SS270A
Q693	2211792 or	2SA992-F or			Coils	
	2211793	2SA992-E	L702		233411K220	NCH-1387
		Diodes	L751-L759		233411K220	NCH-1387
D591-D597	223163 or	1SS133 or	L771-L778		233411K220	NCH-1387
	223205	1SS270A	L801-L806		233411K220	NCH-1387
D691	224450472	MTZ4.7B	L831-L836		233411K220	NCH-1387
		Capacitors			Oscillators	
C591,C691	354721019	100 μ F,6.3V,Elect.	X704		3010198	CSA20.00MX040,Ceramic
		Resistors	X751		3010112	KD6586FFB,Crystal
R1503,R1504	441623914	390 $\Omega \pm 5\%$,1W,Metal oxide film	X752		3010176	AF3817CF,Crystal
		Relais			Capacitors	
RL501-RL503	25065451	NRL-1P5A-DC24-076	C728,C770		354721019	100 μ F,6.3V,Elect.
RL504	25065396	NRL-2P1.25A-DC24-067	C730		375524744	0.47 μ F $\pm 5\%$,50V,Plastic
RL505-RL510	25065451	NRL-1P5A-DC24-076	C732		374721024	1000pF $\pm 5\%$,50V,Plastic
		Terminals	C733		354741009	10 μ F,16V,Elect.
P501,P502	25060138	NTM-8PDPMN066	C734-C736		354721019	100 μ F,6.3V,Elect.
P503	25060162	NTM-4PDPMN088	C740		374721034	0.01 μ F $\pm 5\%$,50V,Plastic
P661,P663	25045365	NPJ-2PDBL-210	C756,C757		354721019	100 μ F,6.3V,Elect.
P662	25045366	NPJ-2PDBL-211	C761,C765		354721019	100 μ F,6.3V,Elect.
P664	25045365	NPJ-2PDBL-210	C783-C786		354721019	100 μ F,6.3V,Elect.
		Sockets	C791-C794		354721019	100 μ F,6.3V,Elect.
JL501	25050760	NSCT-9P555	C801,C802		374721024	1000pF $\pm 5\%$,50V,Plastic
JL502	25050754	NSCT-3P549	C803,C804		354741009	10 μ F,16V,Elect.
P521	2009990216A	NSAS-18P0315	C805,C806		375524744	0.47 μ F $\pm 5\%$,50V,Plastic
P522	2009990215A	NSAS-20P0314	C807,C808		354780229	2.2 μ F,50V,Elect.
			C813,C814		375524744	0.47 μ F $\pm 5\%$,50V,Plastic
			C820		354741009	10 μ F,16V,Elect.
			C821-C824		354721019	100 μ F,6.3V,Elect.
			C825,C826		354724719	470 μ F,6.3V,Elect.
			C831-C842		354721019	100 μ F,6.3V,Elect.
Q721	22240603 or	HD6473258P or	C843-C850		354784799	0.47 μ F,50V,Elect.
	22240604	HD6433258P	C851-C858		371123624	3600pF $\pm 5\%$,50V,Mylar
Q751	22240600R3	LC8900KQ	C859-C866		374721224	1200pF $\pm 5\%$,50V,Plastic
Q752	222740045R1TO	TC74HCU04AF	C867-C874		374728214	820pF $\pm 5\%$,50V,Plastic
Q753	222741575R1TO	TC74HC157AF	C875-C882		354741009	10 μ F,16V,Elect.
Q755	222740745R1TO	TC74HC74AF	C883-C890		370132714	270pF $\pm 5\%$,100V,Plastic
Q756	22240602R3	LC83012NE	C891,C892		354741019	100 μ F,16V,Elect.
Q757	22240607	HM50464P-12				Sockets
Q758	22240601R3	LC83010NE				
Q759	22240570R3	μ PD6381GF	P801		25050451	NSCT-20P275
Q760,Q761	22240571R2 or	HM65256BLFP-10T or	P802,P803		25050446	NSCT-10P270
	22240583R2	TC51832FL-10				Cord ass'y
Q781-Q784	22240554R2	SM5840ES-ET			2061712050	
Q801	22240273	NJM4565S-D				Plug
Q802	22240524	CS5339-KP	P791a		25055133	NPLG-3P117

SCHEMATIC DIAGRAM PART 3

SOUND FIELD SECTION

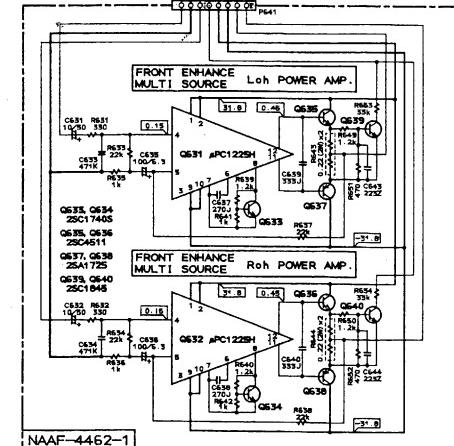
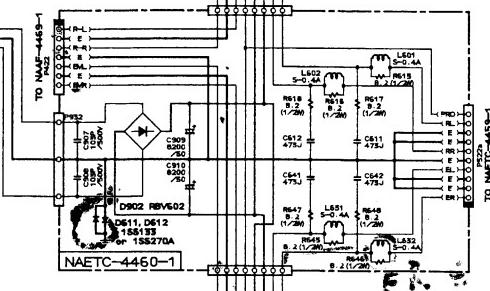
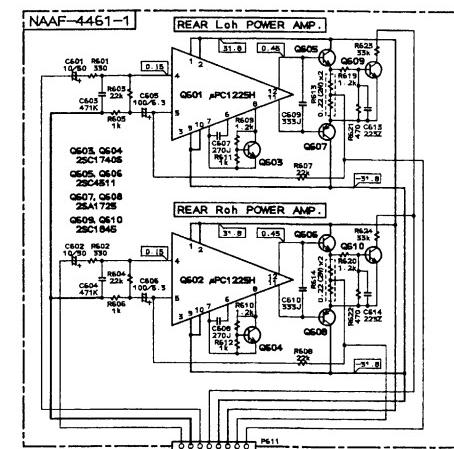
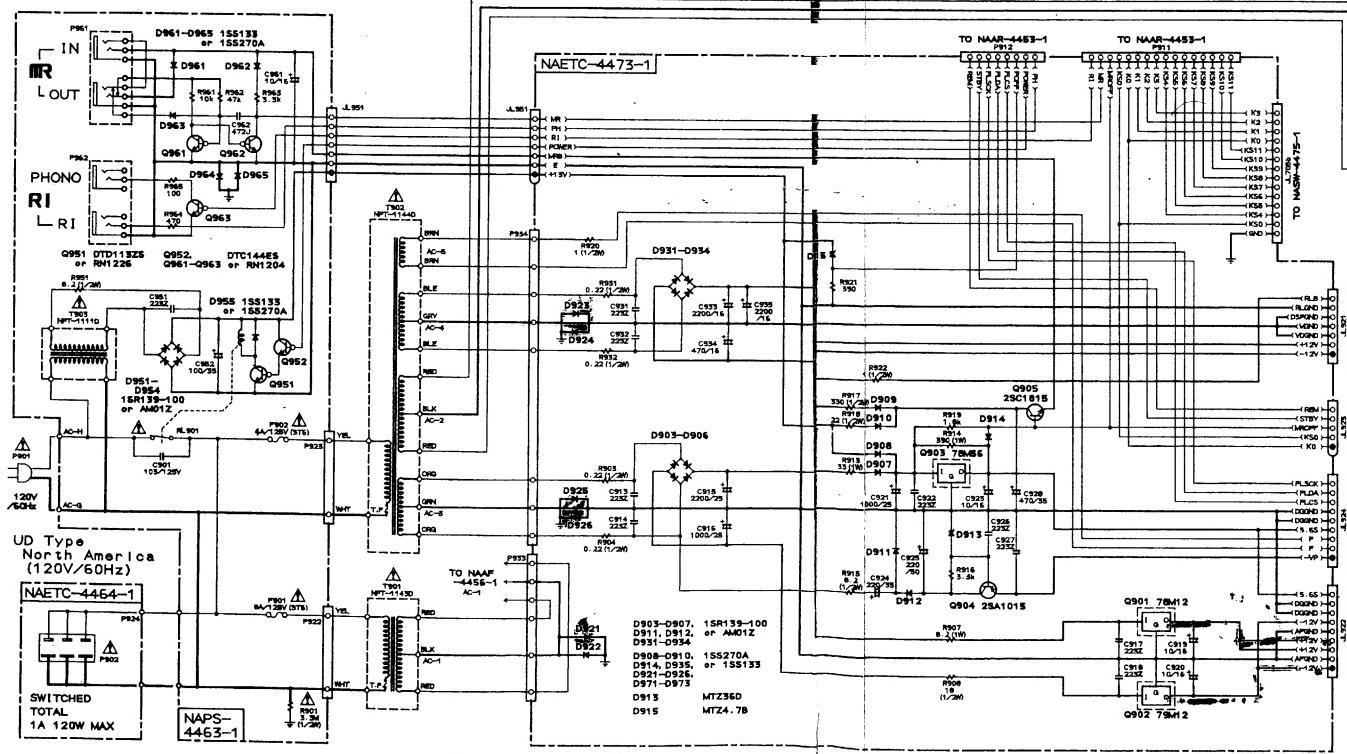
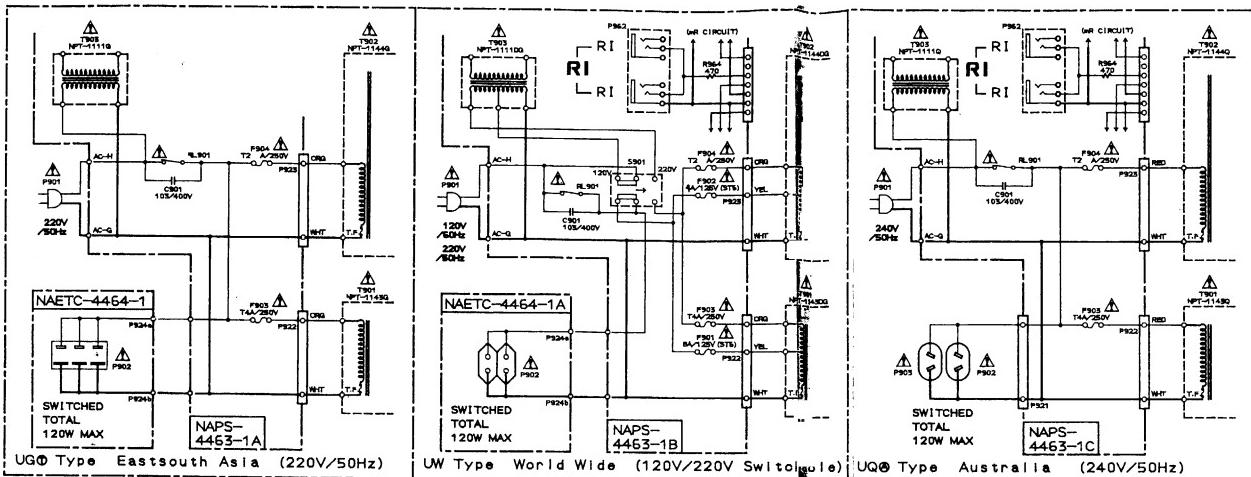


ONKYO CORPORATION

A **B** **C** **D** **E** **F** **G** **H**

SCHEMATIC DIAGRAM PART 4

REAR/FRONT ENHANCE POWER AMPLIFIER AND POWER SUPPLY SECTION



SELECTOR CIRCUIT PC BOARD(NAAF-4465-1)

MARK	CIRCUIT NO.	PART NO.	DESCRIPTION
ICs			
Q301	22240191	NJM4565D-D	
Q302-Q305	22240247 or 22240293	BA15218N or NJM4558L-D	
Q306	22240270	LC7822N	
Q307	22240339	LC7823N	
Capacitors			
C303,C304	354780229	2.2 μ F,50V,Elect.	
C307,C308	354721019	100 μ F,6.3V,Elect.	
C309,C310	374726224	6200pF \pm 5%,50V,Plastic	
C311,C312	374721824	1800pF \pm 5%,50V,Plastic	
C313-C316	353741009	10 μ F,16V,Elect.	
C329,C330	354741009	10 μ F,16V,Elect.	
Terminals			
P301	25045311	NPJ-2PDBL-168	
P302	25045364	NPJ-4PDWH-209	
P303	25045318	NPJ-6PDBL-175	
Sockets			
P311	25050447	NSCT-12P271	
P312	25050446	NSCT-10P270	
Plug			
P321a	25055234	NPLG-3P218	

AUDIO SELECTOR PC BOARD(NAAF-4466-1)

MARK	CIRCUIT NO.	PART NO.	DESCRIPTION
ICs			
Q351-Q355	22240247 or 22240293	BA15218N or NJM4558L-D	
Q356,Q357	22240280	LC7821N	
Capacitors			
C367,C368	354741009	10 μ F,16V,Elect.	
Terminals			
P351	25045364	NPJ-4PDWH-209	
P352,P353	25045318	NPJ-6PDBL-175	
P361	25050447	NSCT-12P271	

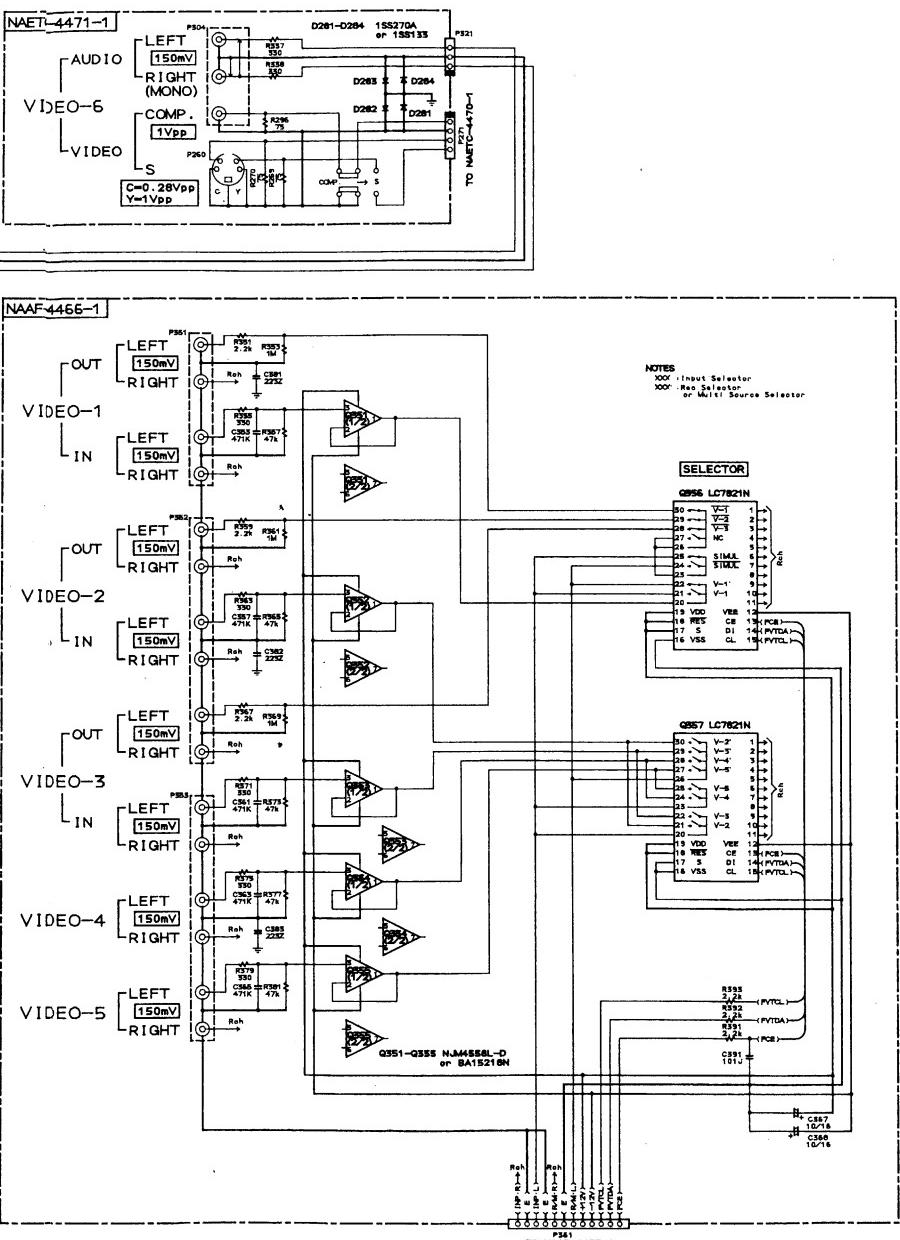
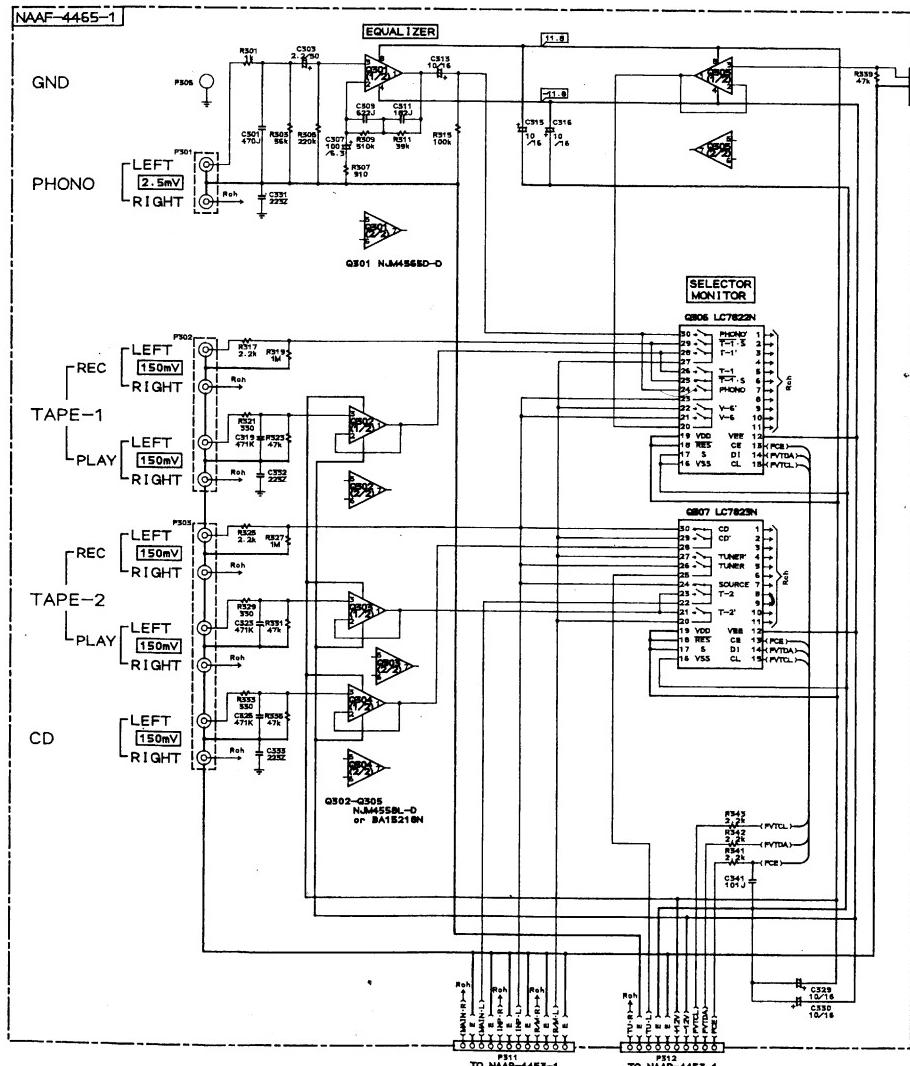
INPUT TERMINAL PC BOARD(NAETC-4471-1)

MARK	CIRCUIT NO.	PART NO.	DESCRIPTION
D281-D284	223163 or 223205	1SS133 or 1SS270A,Diodes	
P260	25050453	NSCT-4P277,Socket	
P271	2009990214	NSAS-8P0313,Socket	
P321	2000676	NSAS-6P632,Socket	
P304	25045321	NPJ-3PDBL178,Terminal	
P322	2061712050	Cord ass'y	

SCHEMATIC DIAGRAM PART 5

INPUT TERMINAL SECTION

- NOTE:**
- THE COMPONENTS IDENTIFIED BY MARK **A** ARE CRITICAL FOR SAFETY.
 - REPAIRS TO THESE PARTS ARE NOT SPECIFIED.
 - VOLTAGE (MEASURED WITH VOLTMETER) CAN BE DC VOLTAGE. (NO INPUT SIGNAL)
 - ALL PNP TRANSISTORS ARE EQUIVALENT TO 2SA1015-OR UNLESS OTHERWISE NOTED.
 - ALL NPN TRANSISTORS ARE EQUIVALENT TO 2SC1815-OR UNLESS OTHERWISE NOTED.
 - ALL DIODES ARE EQUIVALENT TO 1SS133 UNLESS OTHERWISE NOTED.
 - ELECTROLYTIC CAPACITORS (μF) ARE IN $\mu F/V$.
 - ALL CAPACITORS ARE IN μF UNLESS OTHERWISE NOTED.
EX: 0.033μF = 0.033
 - ALL RESISTORS ARE IN OHMS 1/4 WATTS UNLESS OTHERWISE NOTED.
EX: 1KΩ = 1KΩ
 - THE THICK LINES ON PC BOARD ARE THE PRINTING SIDE OF THE PARTS.
 - CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.



SCHEMATIC DIAGRAM PART 6

PREAMPLIFIER SECTION

TX-SV909PRO

BALANCE AND VOLUME CIRCUIT PC BOARD(NAAF-4469-1)

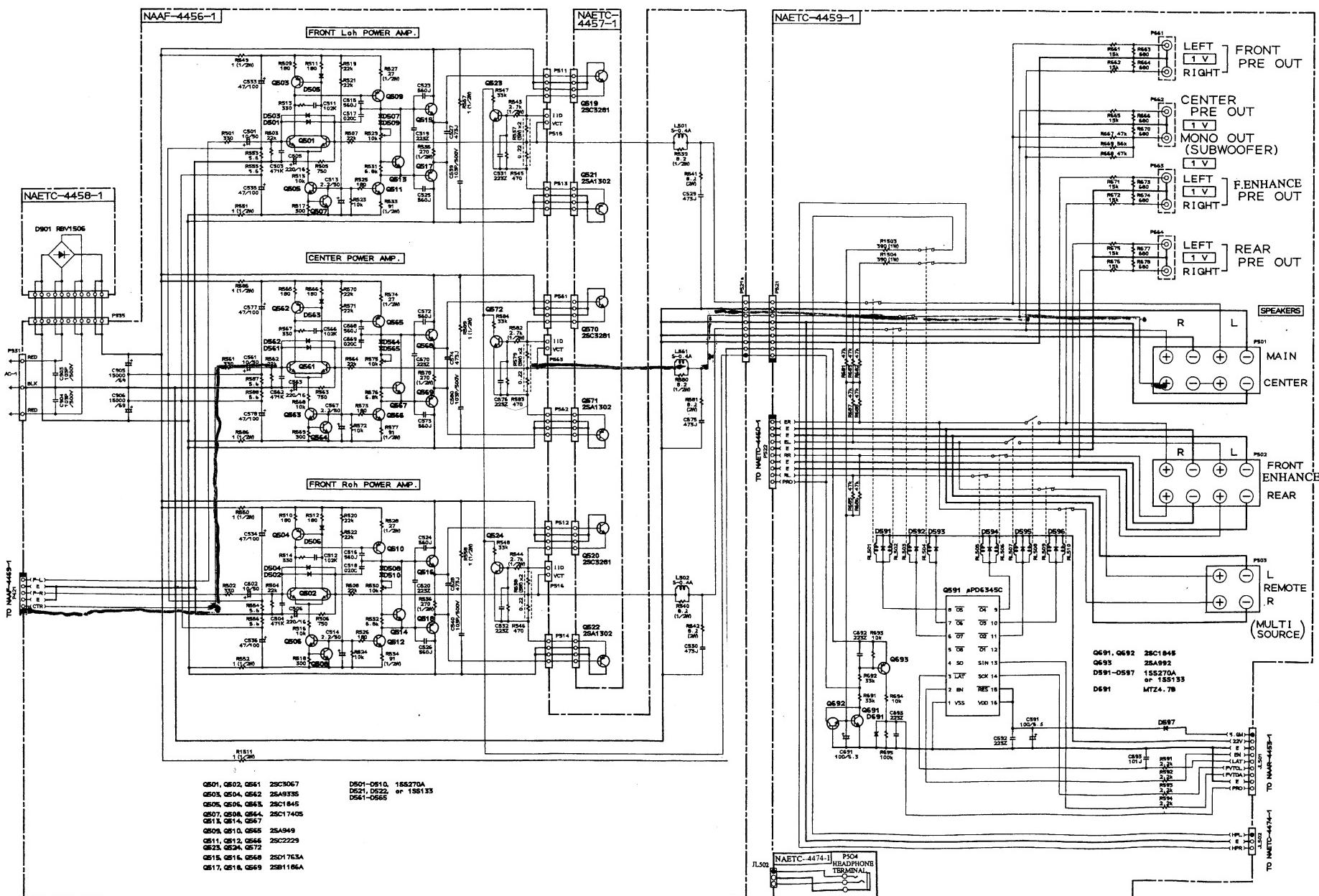
MARK	CIRCUIT NO.	DESCRIPTION	MARK	CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs			D1421,D1422	224450913	Diodes
Q401-Q404	22240266	TC9213P				Capacitors
Q405,Q406	22240605	TC9184P	C401,C402	354780229	2.2 μ F,50V,Elect.	
Q407	22240339	LC7823N	C403,C404	354741009	10 μ F,16V,Elect.	
Q411-Q419	22240247 or 22240293	BA15218N or NJM4558L-D	C405-C408	354780229	2.2 μ F,50V,Elect.	
Q1441	22240239	TA7291S	C409-C412	374722234	0.022 μ F \pm 5%,50V,Plastic	
	Transistors		C413,C414	354780229	2.2 μ F,50V,Elect.	
Q421,Q422	2213631 or 2213632	RN1241-A or RN1241-B	C417,C418	354780229	2.2 μ F,50V,Elect.	
Q431-Q433	2213631 or	RN1241-A or	C421,C422	374722724	2700pF \pm 5%,50V,Plastic	
Q435-Q438	2213632	RN1241-B	C423,C424	374721534	0.015 μ F \pm 5%,50V,Plastic	
Q1431,Q1432	2214350 or	RN2202 or	C425,C426	354741009	10 μ F,16V,Elect.	
Q1455	2213510	DTA114ES	C427,C428	374721534	0.015 μ F \pm 5%,50V,Plastic	
Q1451-Q1454	2213631 or 2213632	RN1241-A or RN1241-B	C429,C430	374728234	0.082 μ F \pm 5%,50V,Plastic	
			C435	354780229	2.2 μ F,50V,Elect.	
			C436	354741009	10 μ F,16V,Elect.	
			C438,C440	354780229	2.2 μ F,50V,Elect.	

MARK	CIRCUIT NO.	PART NO.	DESCRIPTION	MARK	CIRCUIT NO.	PART NO.	DESCRIPTION
		Capacitors				Resistor	
C442	374722724	2700pF±5%,50V,Plastic		R400	5140006A	N16RHL100KA25F,Variable	
C443	374721534	0.015 μ F±5%,50V,Plastic			Sockets		
C444	354741009	10 μ F,16V,Elect.		P411	25050446	NSCT-10P270	
C445	374721534	0.015 μ F±5%,50V,Plastic		P412	25050449	NSCT-16P273	
C446	374728234	0.082 μ F±5%,50V,Plastic		P413	25050447	NSCT-12P271	
C451,C452	354780229	2.2 μ F,50V,Elect.			Plugs		
C453,C454	354741009	10 μ F,16V,Elect.		P421a	25055236	NPLG-5P220	
C457,C458	354780229	2.2 μ F,50V,Elect.		P422a	25055238	NPLG-7P222	
C463,C464	354741009	10 μ F,16V,Elect.		P431	25055558	NPLG-14P532	
C471,C472	354780229	2.2 μ F,50V,Elect.			Clamps		
C473,C474	354741009	10 μ F,16V,Elect.		P441,P442	260224	CP-1S	
C477,C478	354780229	2.2 μ F,50V,Elect.					
C483,C484	354741009	10 μ F,16V,Elect.					
C1401,C1402	354780229	2.2 μ F,50V,Elect.					
C1407,C1408	354741009	10 μ F,16V,Elect.					
C1421-C1424	354741009	10 μ F,16V,Elect.					
C1431,C1432	354741009	10 μ F,16V,Elect.					
C1441	354721019	100 μ F,6.3V,Elect.					
C1471-C1475	354741009	10 μ F,16V,Elect.					

A | **B** | **C** | **D** | **E** | **F** | **G**

SCHEMATIC DIAGRAM PART 7

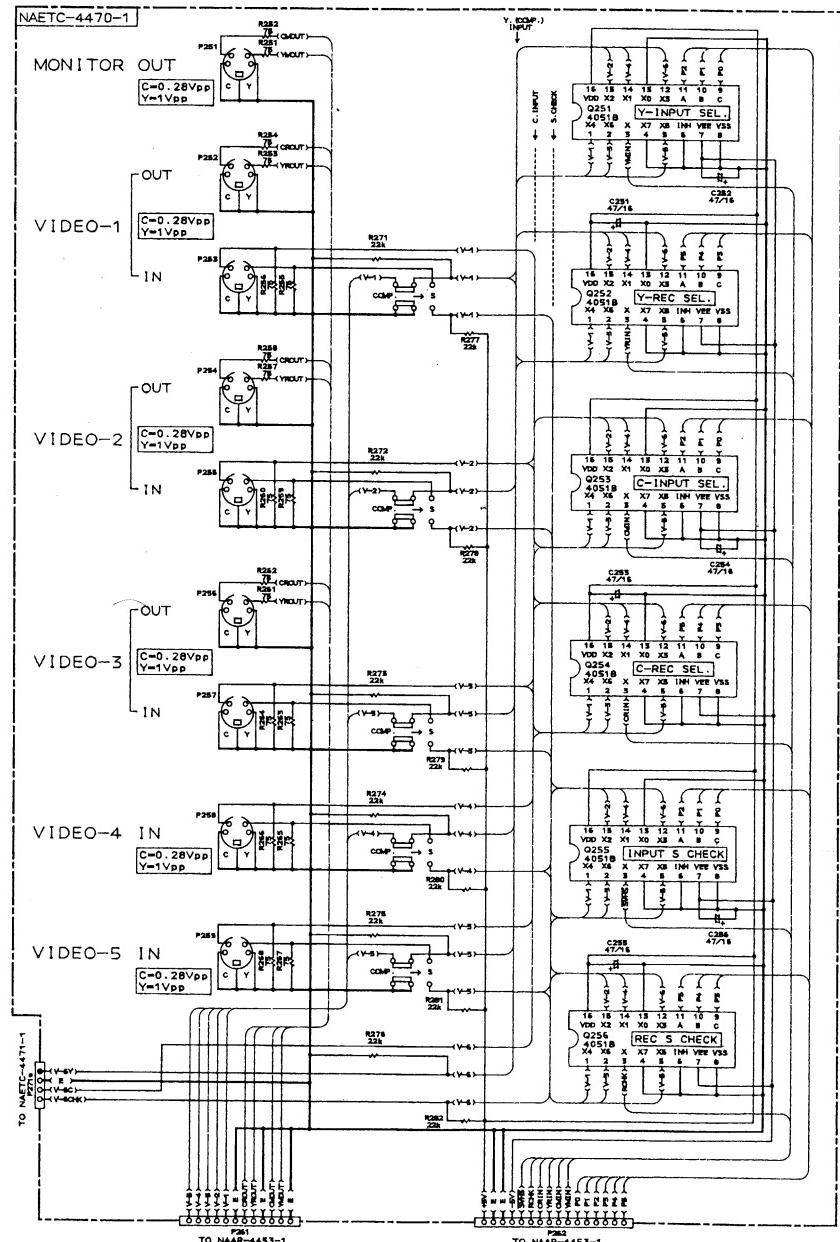
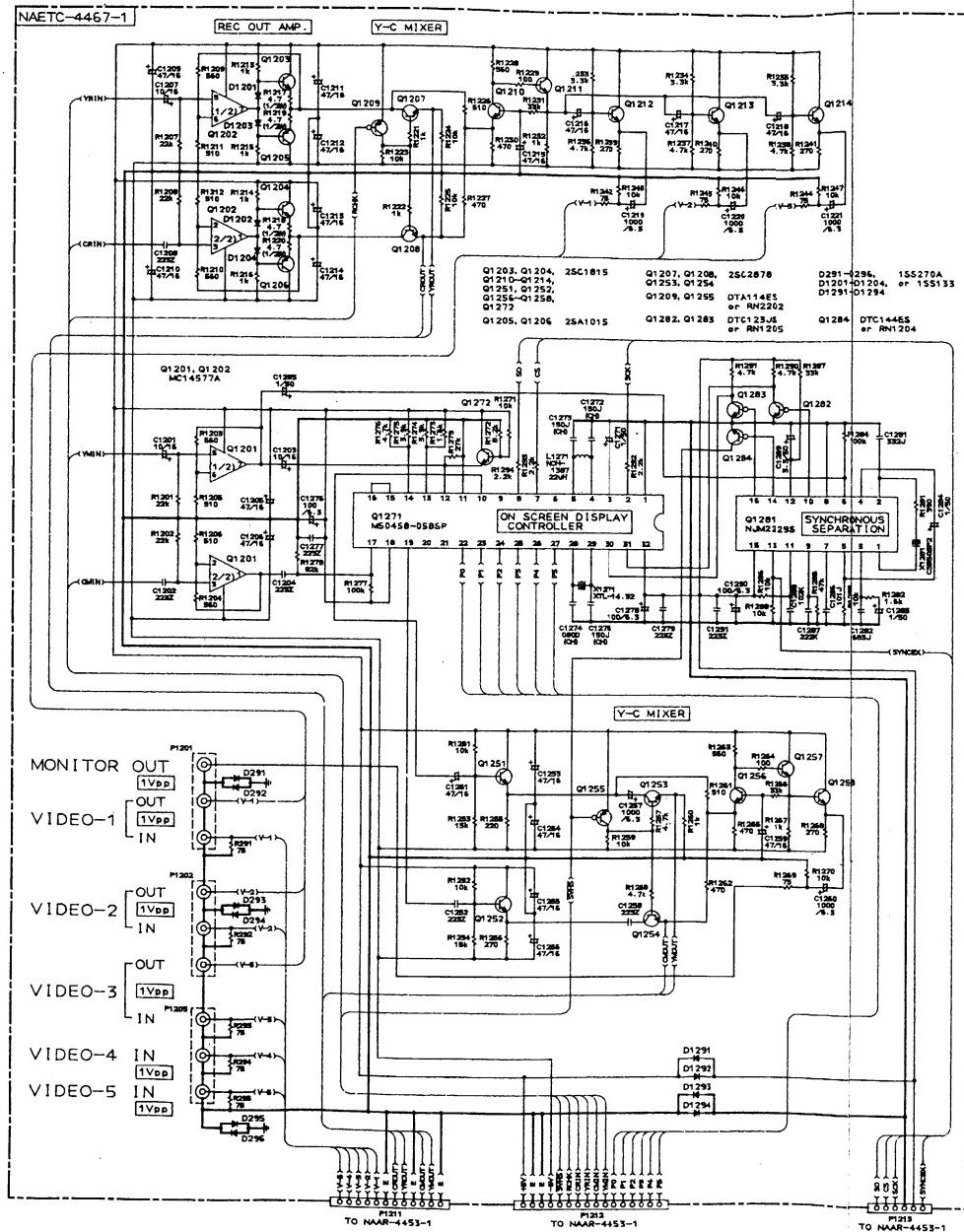
FRONT/CENTER POWER AMPLIFIER SECTION



ONKYO CORPORATION

SCHEMATIC DIAGRAM PART 8

VIDEO SECTION



PRINTED CIRCUIT BOARD PARTS LIST

VIDEO COMPOSITE & DISPLAY PC BOARD(NAETC-4467-1)

MARK	CIRCUIT NO.	PART NO.	DESCRIPTION
		ICs	
Q1201,Q1202	22240401	MC14577A	
Q1271	22240402	M50458-058SP	
Q1281	22240374	NJM2229S	
		Transistors	
Q1203,Q1204	2211255	2SC1815-GR	
Q1205,Q1206	2211455	2SA1015-GR	
Q1207,Q1208	2212285 or	2SC2878-A or	
Q1253,Q1254	2212286	2SC2878-B	
Q1209,Q1255	2214350 or	RN2202 or	
	2213510	DTA114ES	
Q1210-Q1214	2211255	2SC1815-GR	
Q1251,Q1252	2211255	2SC1815-GR	
Q1256-Q1258	2211255	2SC1815-GR	
Q1272	2211255	2SC1815-GR	
Q1282,Q1283	2214660 or	RN1205 or	
	2213640	DTC123JS	
Q1284	2213560 or	RN1204 or	
	221282	DTC144ES	
	Crystal		
X1271	3010167	XTL-14.32M	
	Diodes		
D291-D296	223163 or	1SS133 or	
D1201-D1204	223205	1SS270A	
D1291-D1294	223163 or	1SS133 or	
	223205	1SS270A	
	Ceramic oscillator		
X1281	3010168	CSB503F2	
	Coil		
L1271	233411K220	NCH-1387	
	Capacitors		
C1201,C1203	354741009	10 μ F,16V,Elect.	
C1205,C1206	354744709	47 μ F,16V,Elect.	
C1207	354741009	10 μ F,16V,Elect.	
C1209-C1218	354744709	47 μ F,16V,Elect.	
	Capacitors		
C1219-C1221	354721029	1000 μ F,6.3V,Elect.	
C1251,C1259	354744709	47 μ F,16V,Elect.	
C1253-C1256	354744709	47 μ F,16V,Elect.	
C1257,C1260	354721029	1000 μ F,6.3V,Elect.	
C1271	354780109	1 μ F,50V,Elect.	
C1276,C1278	354721019	100 μ F,6.3V,Elect.	
C1281	374723324	3300pF \pm 5%,50V,Plastic	
C1282	374726834	0.068 μ F \pm 5%,50V,Plastic	
C1283-C1285	354780109	1 μ F,50V,Elect.	
C1289	354780339	3.3 μ F,50V,Elect.	
C1290	354721019	100 μ F,6.3V,Elect.	
	Resistors		
R1217-R1220	442520474	4.7 Ω \pm 5%,1/2W,Metal oxide film	
	Terminal		
P1201-P1203	25045363	NPJ-3PDYE-208	
	Sockets		
P1211	25050447	NSCT-12P271	
P1212	25050449	NSCT-16P273	
P1213	25050444	NSCT-6P268	

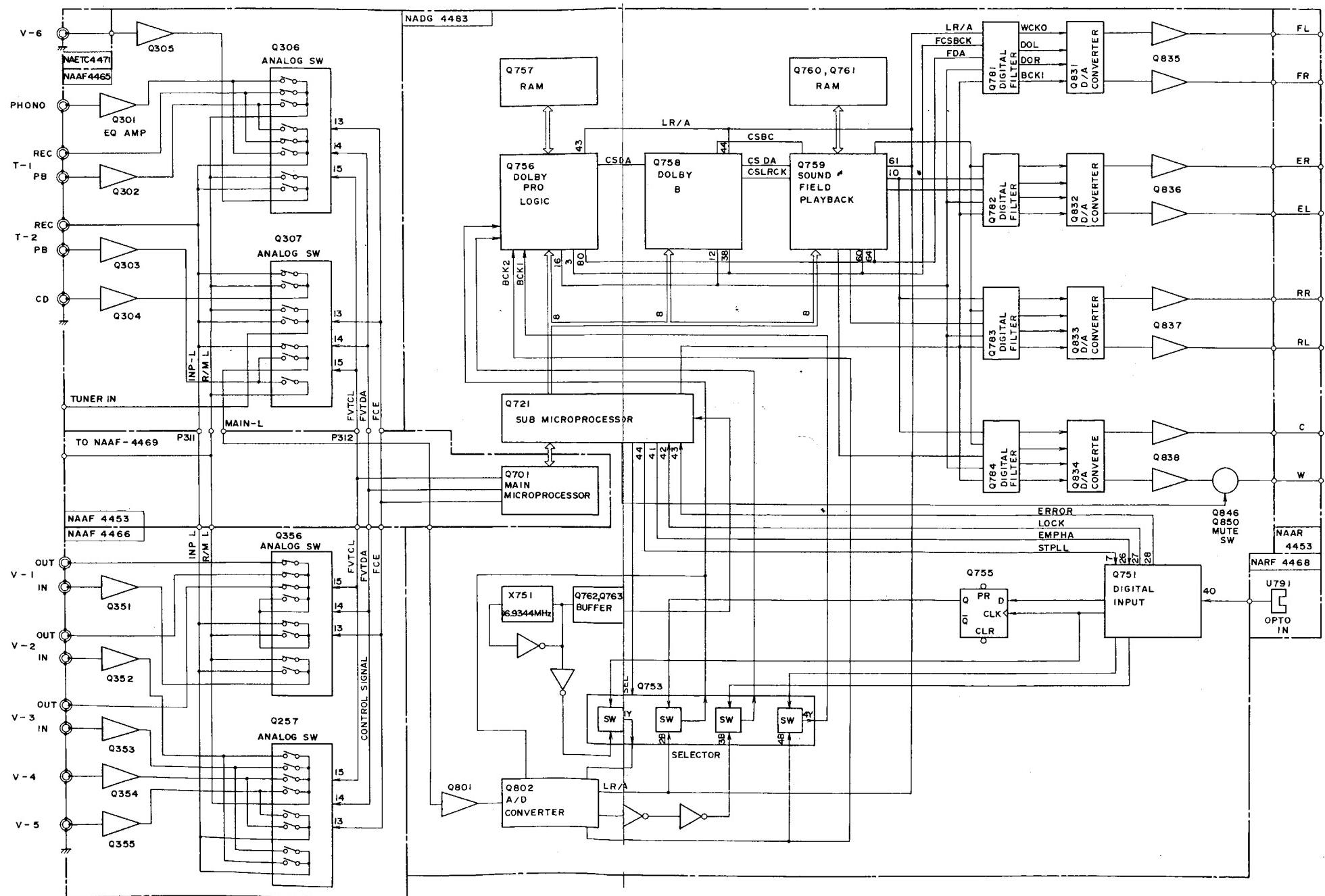
VIDEO SELECTOR PC BOARD(NAETC-4470-1)

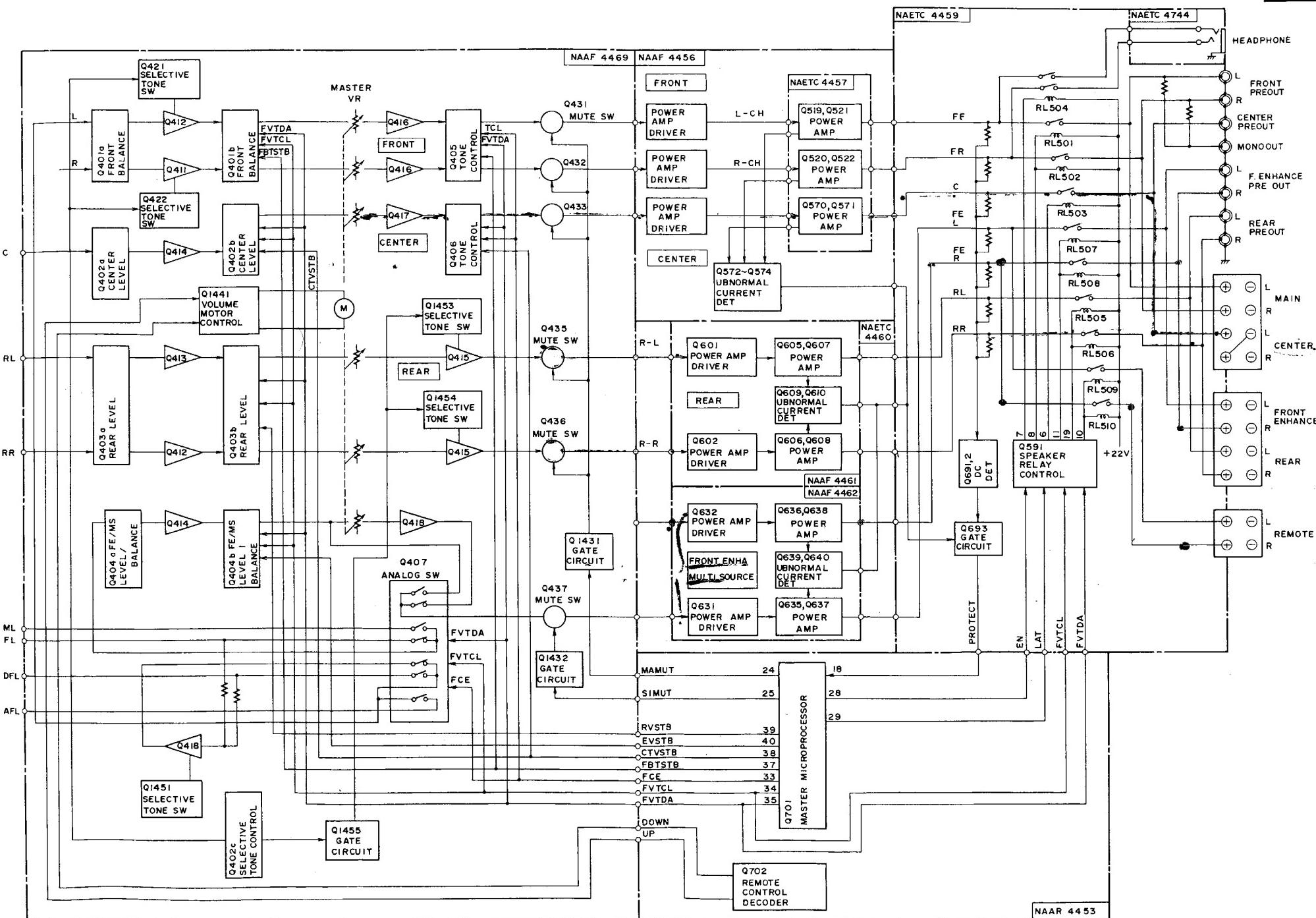
MARK	CIRCUIT NO.	PART NO.	DESCRIPTION
		ICs	
Q251-Q256	222840511	4051B	
		Capacitors	
C251-C256	354744709	47 μ F,16V,Elect.	
		Sockets	
P251,P252	25050390	NSCT-4P217	
P253,P255	25050452	NSCT-4P276	
P254,P256	25050390	NSCT-4P217	
P257-P259	25050452	NSCT-4P276	
P261	25050447	NSCT-12P271	
P262	25050449	NSCT-16P273	
P271	25055235	NPGLG-4P219	

TX-SV909PRO

BLOCK DIAGRAM

AMPLIFIER SECTION

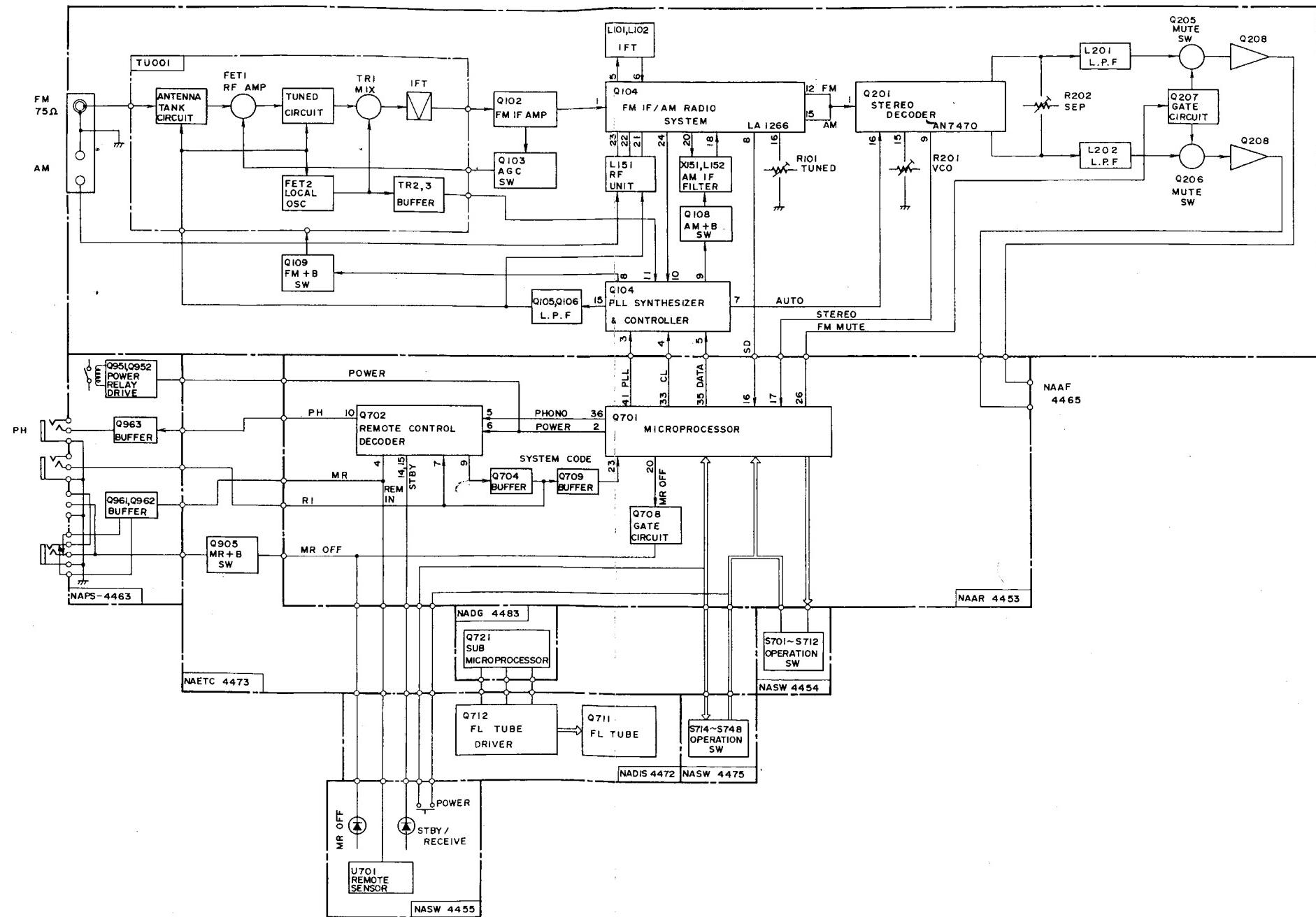




TX-SV909PRO

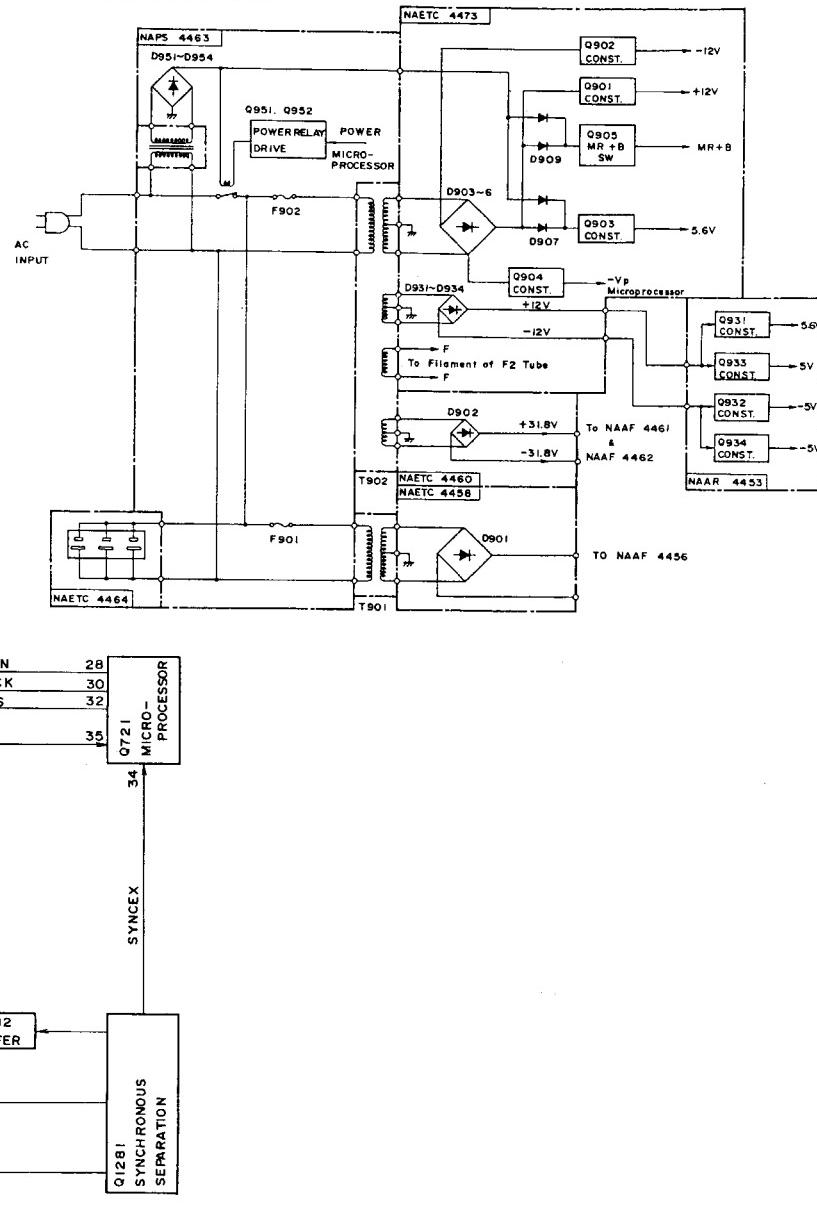
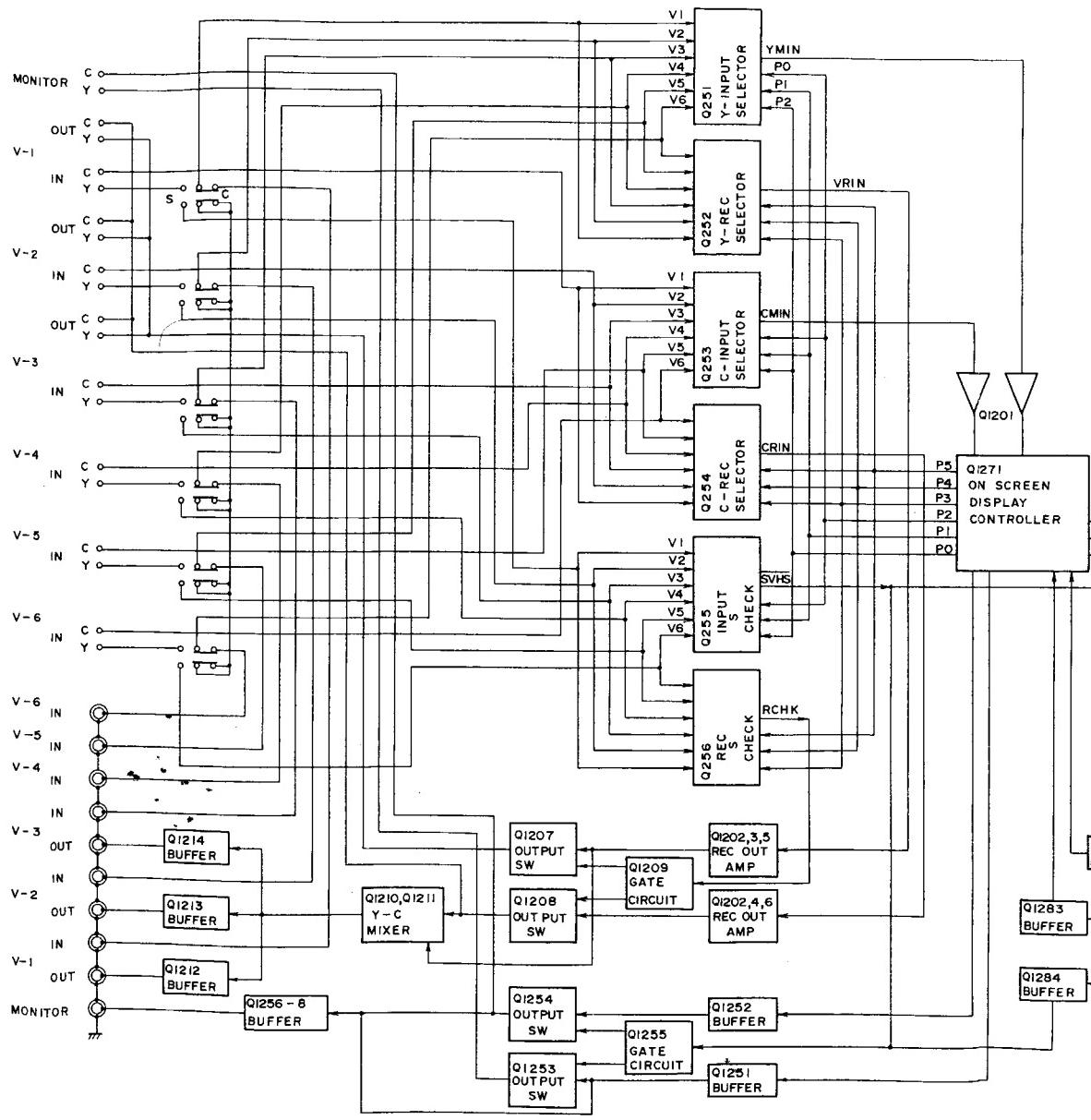
BLOCK DIAGRAM

TUNER SECTION

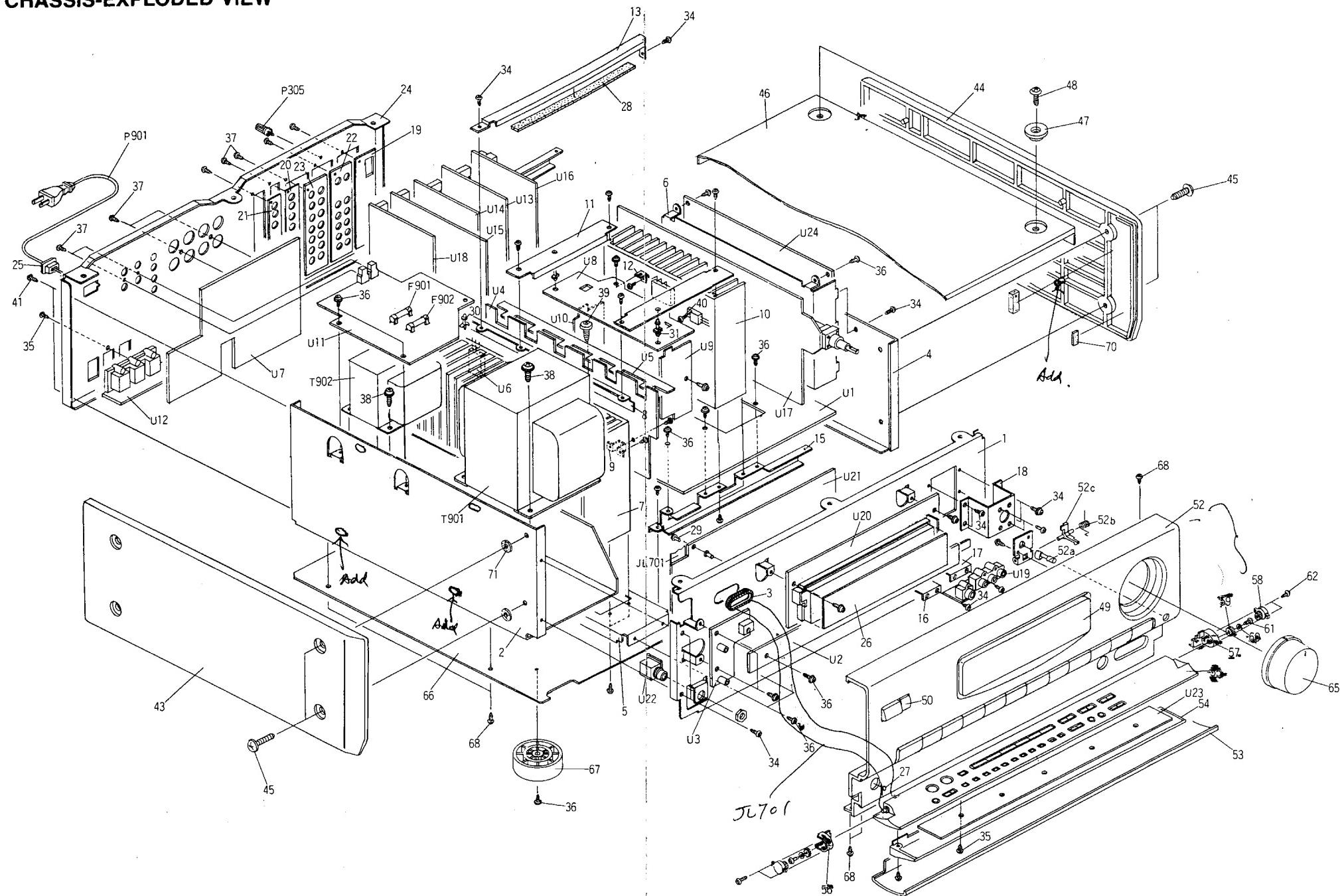


POWER SUPPLY SECTION

VIDEO SECTION



CHASSIS-EXPLODED VIEW



PARTS LIST

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
1	27110695A	Front bracket	52	27215235B	Decoration frame
2	27130685	Bracket,power transformer	52a	28324596A	Knob B
3	28170030	Bushing	52b	27180502A	Spring P
4	27115251B	Side bracket	52c	28335038	Lever P
5	27130686	Bracket H	53	28148264B	Door
6	27150333	Shield plate	54	28324603A	Knob PD
7	27160307B	Radiator	55	28324599B	Knob ass'y,door
8	27141527	Bracket HL-1	56	27301503A	Bearing L
9	27141528	Bracket HL-2	57	27301504A	Bearing R
10	27160308B	Radiator,sub	58	28400363	Damper
11	27141529A	Bracket HS-1	59	27301083	Gear,door
12	27141530A	Bracket HS-2	60	87642607	W2.6×7F(BC),Washer
13	27141531	Bracket PU	61	833426060	2.6TTP+6P(BC),Self-tapping screw
14	27141532	Bracket PD-1	62	833420108	2TTP+10B(BC),Self-tapping screw
15	27141533	Bracket PD-2	63	833430080	3TTP+8P(BC),Self-tapping screw
16	27141534A	Bracket PN-1	64	835430082	3STF+8B(BC),Self-tapping screw
17	27141535A	Bracket PN-2	65	28324597	Knob ass'y,volume
18	27141536	Bracket,volume	66	27170288B	Bottom panel
19	27141537A	Bracket,antenna	67	27175251	Leg
20	27141538A	Bracket VD1	68	834430088	3TTS+8B(BC),Self-tapping screw
21	27141539B	Bracket VD2	69	27150346	Shield plate
22	27141540A	Bracket AD2	70	28141212	4×55×2t,Cushion
23	27141559	Bracket AD	71	28141210	Cushion
24	27121576C	Back panel	D901	22380044	RBV1506,Diode
25	27300750	▲ Bushing,cord —	D902	22380038	RBV602,Diode
26	28133282	Back plate	F901	252053	▲ 8A(ST-6),Primary fuse <D>
27	28140860	t0.5×φ4,Cushion	F902	252049	▲ 4A(ST-6),Primary fuse <D>
28	28141213	Cushion	F903	252077	▲ 4A-SE-EAK,Primary fuse <G>
29	880009	NRP-345,Plastic rivet	F904	252074	▲ 2A-SE-EAK,Primary fuse <G>
30	27190369	KGLS-22S,Holder	JL701	2041142520	NCFC1-142520,Flat cable
31	27190062	KGLS-12S,Holder	JL701a	25050715	NSCT-14P519,Socket
32	27190480	KGLS-8S,Holder	P305	25060044	Ground terminal
33	27190011	KGLS-6S,Holder	P901	253146 or	▲ AS-UC-6#18,
34	834430088	3TTS+8B(BC),Self-tapping screw		253168	▲ Power supply cord <D>
35	833430080	3TTP+8P(BC),Self-tapping screw		253172	▲ AS-CEE,Power supply cord <G>
36	831130080	3TTW+8B,Self-tapping screw	Q519,Q520	2201482 or	2SC3281-R or
37	834430108	3TTS+10B(BC),Self-tapping screw	Q570	2201483	2SC3821-O,Transistors
38	830440089	4TTC+8C(BC),Self-tapping screw	Q521,Q522	2201472 or	2SA1302-R or
39	838440109	4TTB+10C(BC),Self-tapping screw	Q571	2201473	2SA1302-O,Transistors
40	801433	3SMS8W.SW+14B(BC),Sems self-tapping screw	Q605,Q606	2202063,	2SC4511-O,
41	801230	3STS+8BQ(BC),Self-tapping screw	Q635,Q636	2202064 or	2SC4451-Y or
42	831430088	3TTW+8B(BC),Self-tapping screw		2202066	2SC4451-P,Transistors
43	28185381A	Side panel L	Q607,Q608	2202053,	2SA1725-O,
44	28185382A	Side panel R	Q637,Q638	2202054 or	2SA1725-Y or
45	837440169	4TTT+16C(BC),Self-tapping screw		2202056	2SA1725-P,Transistors
46	28184515	Top cover	T901	2300795	▲ NPT-1143D,Power transformer <D>
47	27265155A	Decoration ring		2300796	▲ NPT-1143DG,Power transformer <G>
48	838440089	4TTB+8C(BC),Self-tapping screw	T902	2300799	▲ NPT-1144D,Power transformer <D>
49	28191626	Clear plate		2300800	▲ NPT-1144DG,Power transformer <G>
50	28191568	Clear plate RE			
51	834430088	3TTS+8B(BC),Self-tapping screw			

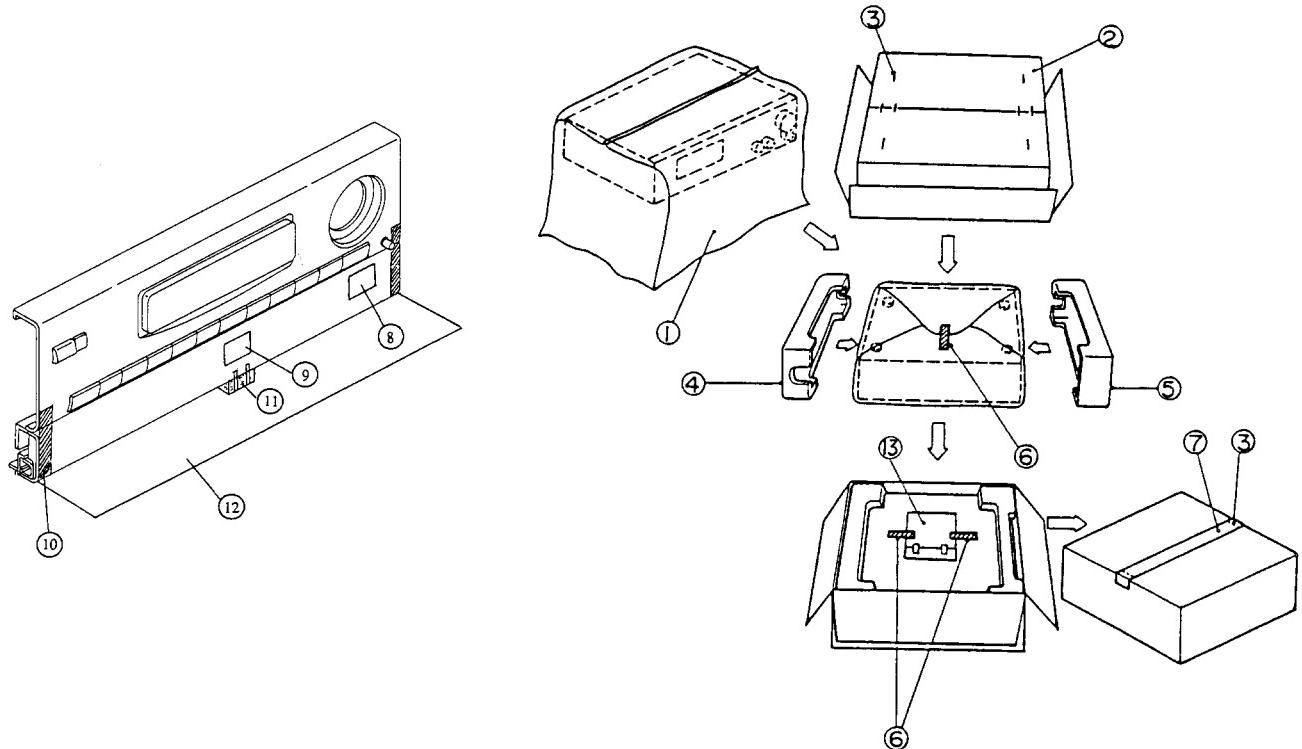
REF.NO.	PART NO.	DESCRIPTION
U1	1A358553-1	NAAR-4453-1,Master microprocessor circuit pc board ass'y <D>
	1A358553-1A	NAAR-4453-1A,Master microprocessor circuit pc board ass'y <G>
U2	1A358554-1	NASW-4454-1,Selector switch pc board ass'y
U3	1A358555-1	NASW-4455-1,Remote control sensor pc board ass'y
U4	1A358556-1	NAAF-4456-1,Front and center power amplifier pc board ass'y
U5	1A358557-1	NAETC-4457-1,Power transistor pc board
U6	1A358558-1	NAETC-4458-1,Rectifier pc board
U7	1A358559-1	NAETC-4459-1,Speaker terminal pc board ass'y
U8	1A358560-1	NAETC-4460-1,Power supply circuit pc board ass'y
U9	1A358561-1	NAAF-4461-1,Rear power amplifier pc board ass'y
U10	1A358562-1	NAAF-4462-1,Front enhance and multi source power amplifier pc board ass'y
U11	1A358563-1	NAPS-4463-1,Power supply circuit pc board ass'y <D>
	1A358563-1A	NAPS-4463-1A,Power supply circuit pc board ass'y <G>
U12	1A358564-1	NAETC-4464-1,AC outlet pc board ass'y <D>
	1A358564-1A	NAETC-4464-1A,AC outlet pc board ass'y <G>
U13	1A358565-1	NAAF-4465-1,Selector circuit pc baord ass'y
U14	1A358566-1	NAAF-4466-1,Audio selector pc board ass'y
U15	1A358567-1	NAETC-4467-1,Video composite and display pc board ass'y
U16	1A358568-1	NARF-4468-1,Tuner circuit pc board ass'y <D>
	1A358568-1A	NARF-4468-1A,Tuner circuit pc board ass'y <G>
U17	1A358569-1	NAAF-4469-1,Balance and volume circuit pc board ass'y
U18	1A358570-1	NAETC-4470-1,Video selector pc board ass'y
U19	1A358571-1	NAETC-4471-1,Input terminal pc board ass'y
U20	1A358572-1	NADIS-4472-1,Display circuit pc board ass'y
U21	1A358573-1	NAETC-4473-1,Power supply circuit pc board ass'y
U22	1A358574-1	NAETC-4474-1,Hedphone terminal pc board ass'y
U23	1A358575-1	NASW-4475-1,Operation switch pc board ass'y
U24	1A358583-1	NADG-4483-1,DSP circuit pc board ass'y

NOTE: <D>:120V model only

<G>:220V model only

NOTE: THE COMPONENTS IDENTIFIED BY MARK
 △ ARE CRITICAL FOR RISK OF FIRE AND
 ELECTRIC SHOCK. REPLACE ONLY WITH
 PART NUMBER SPECIFIED.

PACKING VIEW



REF.NO.	PART NO.	DESCRIPTION
1	29100035A	1020×720,Styrene bag
2	29052404	Master carton box
3	282301	Sealing hook
4	29091571A	Pad R
5	29091570A	Pad L
6	261504	Adhesive tape
7	29110071-1	Damplon tape
8	29361430	Label
9	29361452	Label
10	29110069	Tape
11	28141211	Cushion
12	29095656	Protection sheet
Accessory bag ass'y		
29341728A	Instruction manual	
29100097	250×350,Styrene bag	
292064B	FM antenna	
232140	NMA-3057,AM loop antenna	
3010124	UM-4,Four batteries	
24140230	RC-230M,Remote control transmitter	
2010200	Connection cord RI	
25060123	YAE21-0120A,FM antenna adaptor	
29365019A	Warranty card <D>	
29358002J	Service station list <D>	

NOTE: <D> : U.S.A. model only